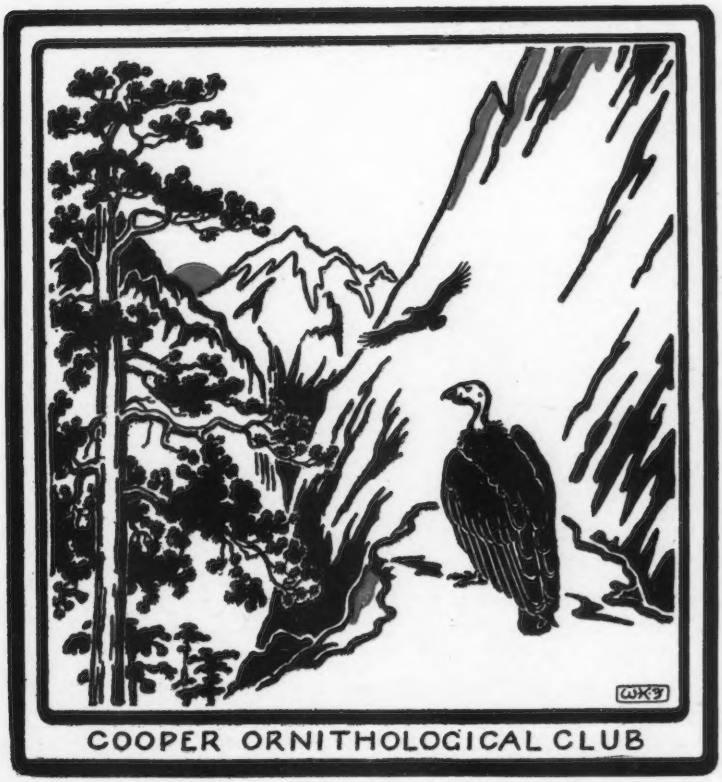
B.H.S.
9/23

THE CONDOR

A Magazine of Western Ornithology

Volume XXVI September-October, 1924 Number 5



COOPER ORNITHOLOGICAL CLUB

THE CONDOR

A Magazine of Western Ornithology

Published Bi-monthly by the Cooper Ornithological Club

Entered as second-class matter January 25, 1922, at the post-office at Pasadena, California, under Act of Congress of March 3, 1879. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917. Authorized January 5, 1921
Issued from the Office of THE CONDOR, 514 Lester Avenue, Pasadena, California

SUBSCRIPTION RATES

Three Dollars per Year in the United States, payable in advance.
Fifty Cents the single copy.
Three Dollars and Twenty-five Cents per Year in all other countries in the International Postal Union.

COOPER CLUB DUES

Three Dollars per year for members residing in the United States.
Three Dollars and Twenty-five Cents in all other countries.

Manuscripts for publication should be sent to the Editor, J. GRINNELL, Museum of Vertebrate Zoology, University of California, Berkeley, California.
Requests for missing or imperfect numbers should be made of the Business Manager, as addressed below, within thirty days of date of issue.
Cooper Club Dues, Subscriptions to **The Condor**, and **Exchanges**, should be sent to the Business Manager.
For the **Purchase of Back Volumes** of **The Condor** or of the **Pacific Coast Avifauna** series, apply to the Business Manager.

W. LEE CHAMBERS, Business Manager, Drawer 123, Eagle Rock, California.

Issued September 15, 1924

CONTENTS

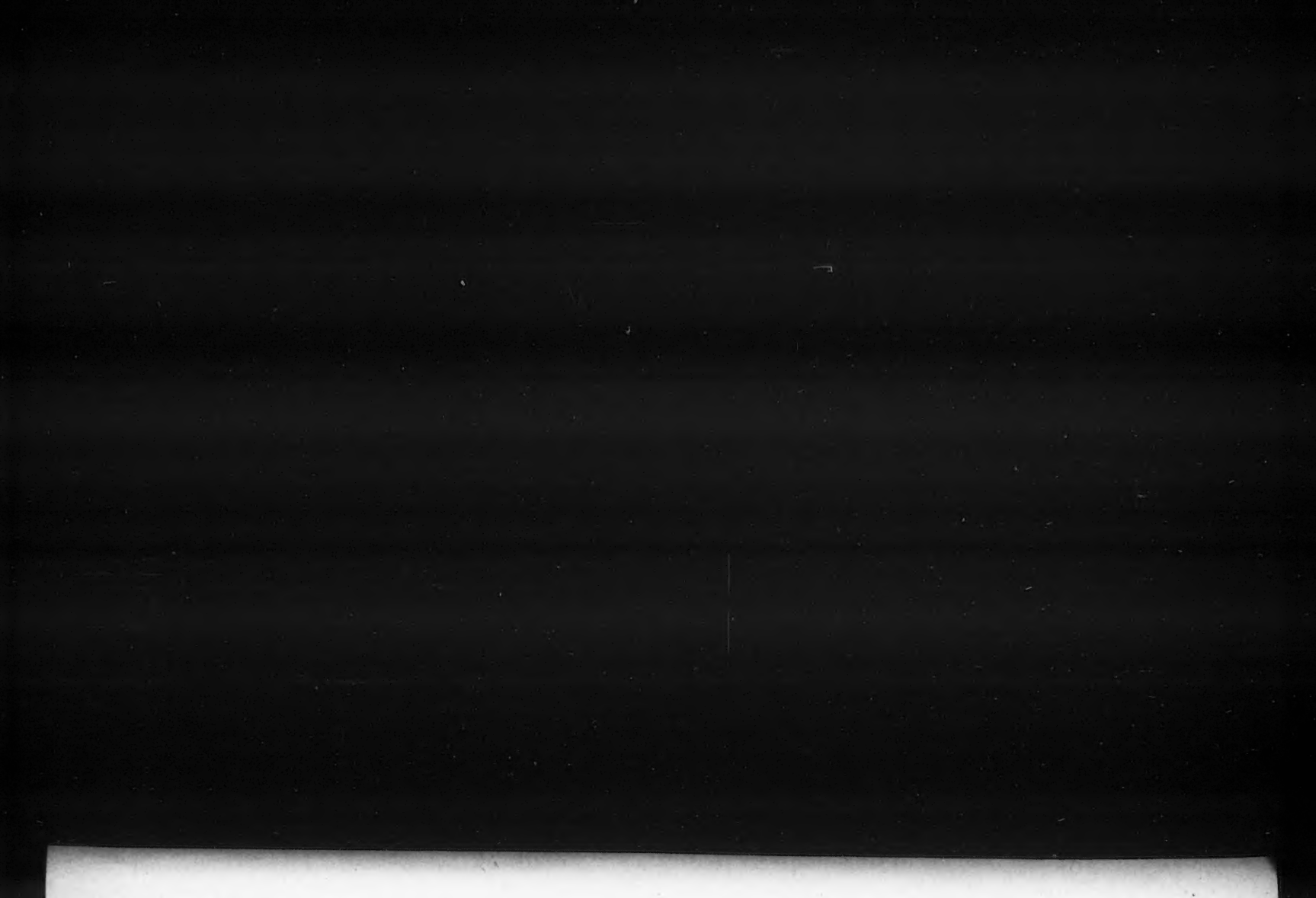
Anomalies in the Distribution of Fossil Gulls ..... *Loye Miller* 173
Notes on the Flight Performance of the Wilson Snipe ..... *Ralph Hoffmann* 175
A Warbler from Nihoa ..... *Alexander Wetmore* 177
Branta dickeyi from the McKittrick Pleistocene (with four drawings) ..... *Loye Miller* 178
Notes on some Birds from Tillamook County, Oregon ..... *Alex. Walker* 180
Fall Migration Notes from the San Francisco Mountain Region, Arizona (with two photos) ..... *Harry S. Swarth* 183

FROM FIELD AND STUDY
- Badger Digs for Bank Swallows ..... *Laurence B. Potter* 191
- The Black Phoebe as a Fisherman ..... *A. B. Howell* 191
- Do Birds or other Animals Interpolate the Third Dimension? ..... *Carl Leopold* 191
- Breeding of the Ancient Murrelet in Washington ..... *Ralph Hoffmann* 191
- California Condors Breed in Captivity ..... *Joseph Dixon* 192
- White Wing-markings in the Heermann Gull: A Record from the Past ..... *H. S. Swarth* 192
- An Unique Blackbird (with photo) ..... *Vasco M. Tanner* 192
- Do Bird Families Have any Permanency? ..... *W. L. McAtee* 193
- Period of Incubation of the Golden Eagle ..... *Clinton G. Abbott* 194
- The Natural End of a Bird's Life ..... *Laurence M. Huey* 194
- Four Species New to North America ..... *Alfred M. Bailey* 195
- Sacramento's Western Martin Colony ..... *Harold C. Bryant* 195
- Song of the Gray Flycatcher ..... *Ralph Hoffmann* 195
- Notes upon Certain Summer Occurrences of the Gray Flycatcher ..... *H. S. Swarth* 195
- Early Nesting of the Junco on the Berkeley Campus ..... *Joseph Dixon* 197

WITH THE BIRD BANDERS ..... *J. Eugene Law* 197
EDITORIAL NOTES AND NEWS (with two photos) 200
COMMUNICATIONS
- Crow-shooting Contests ..... *Allan Brooks* 202
- Who is Trying to Get my Goat? ..... *R. H. Beck* 203

PUBLICATIONS REVIEWED
- Sclater's Systematic List of the Birds of Africa ..... *J. Grinnell* 204
- Howell's Birds of Alabama ..... *J. Grinnell* 205

MINUTES OF COOPER CLUB MEETINGS 206



THE CONDOR

A Bi-monthly Magazine
of Western Ornithology

Volume XXVI | September-October, 1924 | No. 5

[Issued September 15]

ANOMALIES IN THE DISTRIBUTION OF FOSSIL GULLS

By LOYE MILLER

THE STUDENT who works with any of the larger natural groups of organisms will, sooner or later, become interested in the geographic distribution of its members. Quite as properly, though less certainly, he may become interested also in their geologic distribution. When he does begin to study this latter fruitful subject, he is soon brought to realize that he is plowing a field of three dimensions instead of two. The present is merely a cross-section of that great tide of organisms that has flowed out of the remote past and will, we hope, continue far into the future. In this great stream we may find that any particular group, such as species, genus, or family, may have shifted forth or back in its relation to the main stream bed, that is, the earth's surface. My own study of the fossil birds of the Pacific Coast has brought out some facts regarding the time and place distribution of certain bird groups, and these facts are, in some cases, very difficult of explanation. I refer especially to certain observations on the Laridae, the gulls and their allies, as they occur today and as they occurred in the geological period just preceding the present.

I have overhauled, during the past fifteen years, three extensive collections of Pleistocene birds from Oregon and California, all of which might properly be expected to produce the remains of gulls. At Fossil Lake, Oregon, there are abundant remains representing nine different species of gulls and terns, as determined by Shufeldt. This locality is east of the Cascade Mountains in a desert environment. There can be no doubt but that the accumulation was laid down in a broad, shallow, and possibly ephemeral lake that probably resembled the present Buena Vista Lake of the San Joaquin Valley, California, or the lately drained (and late lamented) Klamath Lake near the Oregon line. Such situations are ideal for the living birds and are likewise favorable for the entombment of their remains. Paleontologists are quite in accord as to the situation and the interpretation of observations made upon birds from this particular horizon. Two other collections of even larger numbers of individuals and of very rich faunas have been examined with quite the opposite result, so far as the gulls are concerned.

The excavations in Pleistocene asphalt at McKittrick, California, have yielded about a thousand determinable specimens of birds representing more than forty-three species. By far the greater number, both of individuals and of species, indicate an open country with expanses of shallow water quite comparable to the conditions now

prevailing at Buena Vista Lake or at Los Baños. Great numbers of ducks and shore birds, with a proper proportion of herons, storks, and cranes, constitute the bulk of the collection. Yet there have appeared no specimens of the Laridae in this great mass of material.

Two explanations of this fact might be proposed. One is the almost incredible suggestion that there were no representatives of the family present during Pleistocene times, although they were abundant at Fossil Lake at no greatly diverse period. The second view of the matter is that gulls were immune to the attractions that led to the entombment of other species. Was there some agency that prevented the entombment of these birds? Let us examine the comparable deposit at Rancho La Brea near Los Angeles. This was an asphalt trap similar to the McKittrick situation and from these beds there have been taken more than one hundred and fifty thousand specimens of birds; and yet I have searched vainly during nearly fifteen years for a single fossil representative of the Laridae. In the entire collection from Rancho La Brea—those at the University of California and those at Los Angeles representing twenty or thirty excavations from various lenses—there is but one small packet of bones that contains any gull remains. This packet, however, contains several gull bones of unchallengeable identity. The interesting fact regarding this particular packet is that the excavation data show the bones to have been taken from a chimney in the asphalt which contained the remains of *Homo,* and which was devoid of all those typical Pleistocene species so very abundant in these beds. Studies in this chimney accumulation by Dr. J. C. Merriam, working on the mammalian fauna and the stratigraphy, with a check on the bird remains by Miller, led to the conclusion that the chimney was a pathway of Recent intrusion by which *Homo, Larus,* and other present day forms reached a point in this particular asphalt lense some eight or ten feet below the surface. The interesting fact is that neither man nor gull was immune to the entombment processes, but neither occurred in truly ancient state.

While collecting Recent birds along the coast at Hueneme, California, I came upon a small accumulation of crude oil that had leaked from a shallow buried pipe. This oil spread over the ground in a pool about ten feet in diameter and displayed a surface grading from a fairly fresh seepage at the center to a dust and rubbish covered marginal area. Here was reproduced an actual three-dimension picture of what the imagination pictures Rancho La Brea to have been during Pleistocene. Visible in this trap were the remains of six or eight birds of several species among which at least one gull was recognizable. There was no immunity for gulls, it would seem.

Here, then, are the facts: Gulls were abundant during Pleistocene time in the interior of Oregon. They are now abundant over most of California in places suitable for them. The sites of the McKittrick and the Rancho La Brea deposits are within favorable areas. The Pleistocene faunas of both these deposits are such as to suggest conditions favorable to gulls. These birds are not immune to the asphalt trap. The entire family of Laridae is absent from the hundreds of thousands of fossil bird remains from the two asphalt horizons. Add to these points the absence of gull remains from the collections taken at the Upper San Pedro Pleistocene beds that yielded sixteen species of birds from littoral marine and sand dune deposits, and the easier conclusion is that the Pleistocene land of southern California harbored no gulls. Yet such conclusion seems most incongruous. Certainly it is hard to explain.

Southern Branch, University of California, Los Angeles, June 29, 1924.

NOTES ON THE FLIGHT PERFORMANCE OF THE WILSON SNIPE

By RALPH HOFFMANN

ON JUNE 1, 1924, in a wet meadow near the outlet of Eagle Lake, Lassen County, California, I found Wilson Snipe (*Gallinago delicata*) executing the flight performance characteristic of the bird in the breeding season. As many as half a dozen birds were in the air at one time in a cloudless sky for several hours after sunrise; at least two birds were still at it when I left the spot at 9:30 A. M.

Recalling the frequent discussions I had heard in the Fresh Pond marshes in Cambridge, Massachusetts, where the sound came from migrating birds flying overhead in the dusk, and remembering that the source of the sound was then considered even by eminent ornithologists a moot point, I observed the birds of Eagle Lake with care and was able to come to a definite conclusion. When I looked the point up later in the literature at my command, I found so much uncertainty in the majority of standard works and such strong confirmation of my conclusions by the few writers that seemed to speak from actual observation, that it seemed worth while to sum up the whole matter and put it on record.

The Snipe which I watched mounted high over the small meadow, reaching as near as I could estimate a height of well over 200 feet. Each bird then flew with rapid wing beats in wide sweeps, during which he dipped sharply downward from time to time but without altering the rate of his wing beats. These dips varied from short, shallow ones to longer, deeper ones. I soon noticed that the tail, which was closed on the level sweeps, was fully opened during the dip, so that the sun shining through the central tail feathers brought their rufous color out prominently. This color did not show when the tail was closed. The characteristic sound which came from the bird during the flight, which I attempt to transcribe by the syllables *hŏŏ, hŏŏ, hŏŏ, hŏŏ, hü, hü, hü,* became shriller toward the end of the downward plunge; the length of time that it continued was strictly coincident (allowing for the time the sound took to travel) with the period between the opening and the closing of the tail, so that I could invariably predict an instant or two beforehand the beginning of the sound.

I quote now a few statements from standard works which show plainly that the authors have not based their statements on actual observation under favorable circumstances.

Barrows, Michigan Bird Life, p. 178: ". . . making a peculiar sound with the wings, and probably also at the same time with the voice."

Eaton, Birds of New York, vol. I, pp. 302-303: "The sound is evidently produced by air rushing through the feathers of the rapidly vibrating wings."

Sanford, Bishop and Van Dyke, The Water Fowl Family, p. 345: ". . . the rushing of their wings causing a peculiar roaring sound."

Thompson (The Birds of Manitoba, pp. 498, 499) has evidently observed the performance, but seems to have confused two sets of notes and contradicts himself. On page 498 the wings are "rigidly set" and on page 499 they are "vibrating with great rapidity."

Newton was the first author that I came upon who gave the tail as a possible source of the sound. Speaking of the European bird he says (A Dictionary of Birds, p. 885): "Others again assert that it is caused by the vibration of the webs of the outer rectrices," and refers to Meves' experiment with feathers affixed to a rod and drawn rapidly downward.

It was only when I came upon Dawson's account in his Birds of California, which I had not yet seen when I made my own observations, that I found clear evidence that the writer had seen and correctly interpreted the actual flight performance. A little later my attention was called by Mr. W. P. Taylor to an admirable account by E. A. Kitchin in The Murrelet. I give the two accounts in the order of their publication.

"The noise is undoubtedly produced with the tail, and I do not think the wings or any other part of the body had anything to do toward producing the vibrating sound. The noise is made when the bird suddenly dips in its flight. At that time the tail is held downward at right angles with the direction of flight. The tail feathers are spread out fan-like and the sound is undoubtedly created by the wind passing through the stiffened feathers. The sound stopped the instant the bird brought his tail to its natural shape and he again sought his former level. I witnessed these performances not a few, but many times, and many times directly overhead.

"The weather this day was rainy and cloudy, as were all other days when we witnessed these peculiar 'aviating' flights. They never 'went up' on bright days. The flights were generally of from five to twenty minutes duration" (E. A. Kitchin, in The Murrelet, vol. II, no. 3, 1921, p. 11).

"I have come to the conclusion that the body of the sound is produced by the impact of the air upon the sharp lateral feathers of the tail, held stiffly, while the pulsations of sound are produced by the wings. . . . The sound is never produced save when the tail is spread to the utmost, so that the two outer pairs of rectrices, which are much the shortest, are thrown forward at right angles to the axis of the body" (W. L. Dawson, The Birds of California, p. 1219).

The fact that Kitchin's account is published in a journal of very limited circulation and that Dawson's excellent account does not stand out in a work of such length will perhaps justify me in giving my own observations and in this way calling a more general attention to the two previous ones with which they correspond. Mr. Dawson's, it will be noted, goes farther than either Mr. Kitchin's or mine, and accounts, it seems to me correctly, for the definite rhythm into which the sound is broken. If the wings were not beating rapidly on the down pitch, the sound would be continuous. I might add that the shriller tone which I seem clearly to detect toward the end of the downward plunge would be due to the increase in velocity and the corresponding increase of vibration in the tail feathers.

It may be of interest to add a few other notes made while observing the Snipe in the above mentioned meadow. I was struck by the fact that no birds at any time used the usual "scaipe" note. The common note when rising or descending, when on the ground or when flying from one part of the meadow to the other, was an excited, rapidly repeated *kik kik kik* or *kek kek kek*. A bird which I flushed just after it had come down from a flight flew a short distance across the meadow, calling *kek kek kek*, and using a pitching flight with wings raised and held extended during each pitch. A bird which I took to be a female when flushed flew to a fence post and at first crouched on the post, calling *kuk kuk kuk* in a low tone. Later she stood upright and uttered a louder note, *kekta kekta kekta*. This she kept up for a long time, suggesting a guinea-fowl. The birds were at all times tame, allowing an approach within three or four feet before flushing.

Carpinteria, California, July 18, 1924.

A WARBLER FROM NIHOA

By ALEXANDER WETMORE

THE ISLAND of Nihoa, sometimes known as Moku Manu or Bird Island, the most eastern of the islets included in the Hawaiian Bird Reservation, is located about 125 miles west-northwest of Niihau and 270 miles from Honolulu. In appearance and conformation it is a mere rock, three-fourths of a mile long by a fourth of a mile wide, that on three sides rises in sheer precipices from 300 to 900 feet above the sea, while from the summit the land slopes steeply to the shores of Adams Bay, an indentation on the southeast that offers the only practicable spot for landing. In earlier days Hawaiians came to Nihoa regularly, but in recent times few have attempted a visit, as, except with a favorable wind, heavy surf prevents small boats from approaching the projecting rocks on which a landing must be made.

The steep slopes of the island are covered with a woody-stemmed Chenopodium, clumps of grass, and a few other plants, with small groves of the Nihoa palm, *Pritchardia remota* (peculiar to the island), in two or three gulches. Insect life is abundant, and water, bitter with salts leached from the excrement of sea birds, seeps down some of the steep valleys. A species of Drepanid allied to *Telespyza cantans* Wilson, the "finch" of Laysan Island, was discovered here by Lieut. W. H. Munter, of the U. S. Revenue Cutter *Thetis*, and specimens brought to Honolulu to Dr. W. A. Bryan, then at the Bishop Museum, were described (Auk, xxxiv, 1917, p. 71) as *Telespyza ultima*, the specific name being chosen to express the belief that the species represented the last of passerine birds to be discovered in Hawaii.

During the U. S. S. *Tanager* expedition of the summer of 1923 we came to Nihoa first at the end of May, but were unable to land. Returning on June 10 we found the sea more favorable and succeeded in disembarking a light camping outfit and a party of men. I remained on the island until June 16 when the ship returned and I continued west to Necker.

The Nihoa "finch" was present in abundance, and on the morning following our arrival I was pleased to observe another perching bird, related to the Miller-bird, Conopoderas familiaris (Rothschild), of Laysan, a species of the family Sylviidae. This Miller-bird was recognized at once as new, a fact substantiated by subsequent comparison. It may be known as

Conopoderas kingi, sp. nov.

Characters.—Similar to *Conopoderas familiaris* (Rothschild),[1] but throat, breast and abdomen paler, nearly white; auricular region darker; markings about eye not yellowish; upper surface much darker; bill heavier, averaging very slightly longer; tarsus heavier, slightly longer.

Description.—Type, U. S. Nat. Mus. Cat. No. 287,888; adult male, collected June 11, 1923, on Nihoa Island, Hawaii, by Alexander Wetmore (collector's number, 7318). Crown and upper back dark olive, the feathers margined faintly with grayish; lower back and rump between olive brown and deep olive, the feathers with grayish margins; wings chaetura drab, the coverts margined with olive-brown, the primaries and secondaries with grayish drab; rectrices (much worn) chaetura drab, margined faintly with grayish drab; a line of whitish feathers on upper and lower eyelids; lores mixed whitish and dark olive; cheeks mixed whitish and grayish olive; auricular region grayish olive; throat, middle of breast, and abdomen whitish, sides of neck and breast washed with light grayish olive; flanks dull buffy brown; tibia dull olive-brown; under tail-coverts dark grayish olive; under wing coverts between tilleul-buff and pale olive-buff, the outer ones mottled with dusky; bend of wing whitish, more or less mixed with dusky. Base of mandible brownish, rest blackish; tarsus and toes blackish slate (from dried skin).

[1] *Acrocephalus familiaris* Rothschild, Ann. Mag. Nat. Hist., ser. 6, vol. 10, 1892, p. 109. (Laysan Island.)

Measurements.—(In millimeters): Males (9 specimens), wing, 61.0–66.2 (63.9); tail, 57.5–62.0 (60.1); culmen from base, 16.7–18.5 (17.8); tarsus, 22.8–25.6 (24.8).

Females (6 specimens), wing, 61.0–62.9 (61.3); tail, 52.1–60.6 (57.7); culmen from base, 15.8–17.5 (16.5); tarsus, 23.5–24.5 (24.0).

Type, wing, 64.2; tail, 57.5 (worn); culmen from base, 18.5 (approximate); tarsus, 25.6.

Range.—Confined to Nihoa Island, Hawaii.

Remarks.—Difference in length of bill and tarsus, when compared with *C. familiaris*, is slight, but *kingi* has these parts decidedly heavier. Measurements of a small series of *familiaris* are as follows:

Males (5 specimens), wing, 59.1–64.6 (62.4); tail, 58.2–60.8 (59.8); culmen from base, 16.0–17.2 (16.7); tarsus, 22.0–23.7 (23.2).

Females (3 specimens), wing, 58.0–59.0 (58.6); tail, 53.0–54.0 (53.5); culmen from base, 16.3–16.5 (16.4); tarsus, 21.8–23.2 (22.3).

Nihoa Miller-birds were encountered in heavy growth where they moved about in a leisurely manner, usually near the ground in dense cover, in action somewhat suggestive of vireos of the *Vireosylva* group. The breeding season had ended at the time of my visit, young were fully grown, and most of the adults had begun the post-breeding molt. I estimated the total number of individuals present as near 100. The bird is described from a series of sixteen skins. In conclusion it may be noted that Nihoa marks the northeastern limit for the genus *Conopoderas* in the Pacific.

The species is named in honor of Lieutenant-Commander Samuel Wilder King, to whose interest and seamanship is due much of the success attained by the U. S. S. *Tanager* expedition of 1923.

Washington, D. C., July 1, 1924.

BRANTA DICKEYI FROM THE McKITTRICK PLEISTOCENE

(WITH FOUR DRAWINGS)

By LOYE MILLER

IN THE CONDOR for July, 1922 (vol. XXIV, pp. 122-125), students of Recent birds were offered an account of the remarkable collection of bird remains taken from the Pleistocene asphalt of McKittrick, California. Excavation of these beds has been extended since that time through activities of the University of California and of the Carnegie Institution of Washington. One of the fruits of further study of the avifauna of the horizon is a gigantic goose of the genus *Branta* that is unlike any form heretofore made known.

Five species of this genus have previously been recorded from American horizons, as follows:

Branta hypsibata (Cope), an extinct species from the Pleistocene of Fossil Lake, Oregon, described by Cope in 1878 (Bull. U. S. Geol. and Geog. Surv. Terr., IV, no. 2, p. 387). The species is later discussed by Shufeldt in a study of the same collection and by him the bird is recorded as "about the size of *Branta canadensis;* but the bones were stouter and of different proportions."

Branta propinqua Shufeldt, an extinct species from the Pleistocene of Fossil Lake, Oregon, described by Shufeldt as of smaller size than *B. canadensis* (Journ. Acad. Nat. Sci. Phila., ser. 2, IX, 1892, p. 389).

Branta meniscula Wetmore, an extinct species from Upper Pliocene beds near Benson, Arizona, described as smaller than *B. canadensis minima* (Proc. U. S. Nat. Mus., vol. 64, 1924, p. 6). This is really a pigmy goose.

Branta bernicla (Linn.), a surviving species reported as a fossil from the Pleistocene of Fossil Lake, Oregon, by Shufeldt (Bull. Am. Mus. Nat. Hist., xxxii, 1913, p. 147).

Branta canadensis (Linn.). While none of the above forms has been made known from more than one formation, this species has been recorded by Shufeldt and by Miller from five different horizons, as follows: Fossil Lake, Potter Creek Cave, Rancho La Brea, Upper San Pedro, and certain Pleistocene beds of Alameda County, California. These deposits are all Pleistocene in age and all except Fossil Lake are in California.

The genus *Branta* is thus seen to have a diversity of extinct forms and the surviving species *canadensis* to have an extended geological occurrence. In fact, *Aquila,* with its seven species known to paleontology, is the only genus of America's fossil birds which is known by the writer to exceed *Branta* in this respect. *Aquila* has but one species, a very stable one, surviving in America, while *Branta* has three species, and one of these runs quite a gamut of variations.

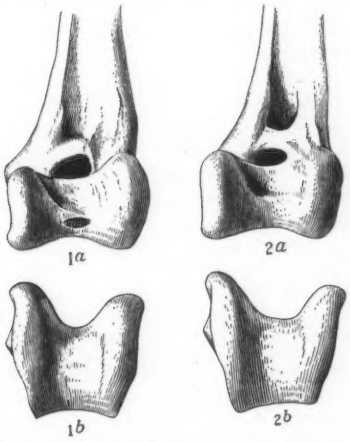


Fig. 46. 1*a*, 1*b*, *Branta dickeyi*, TIBIOTARSUS, APPROXIMATELY NATURAL SIZE; FROM PLEISTOCENE ASPHALT OF MCKITTRICK, CALIFORNIA. 2*a*, 2*b*, *Cygnus columbianus*, TIBIOTARSUS, APPROXIMATELY NATURAL SIZE; RECENT MALE. Drawings by J. R. Ridgway.

With this relatively complete history of *Branta* in mind, it is interesting to find a new and gigantic species of the genus in the McKittrick asphalt.

Branta dickeyi, new species[1]

Type specimen no. 26782, Museum of Paleontology, University of California, a right tibiotarsus complete. Osteological characters are those of *Branta* enlarged to the dimensions of *Cygnus columbianus.*

Comparison is here made with an adult male specimen of *Cygnus columbianus,* loaned by Donald R. Dickey; the comparison with *Branta canadensis* was made with a series of that species ranging from the smallest variety up to the maximum size. From these living geese and from Cope's Pleistocene *B. hypsibata,* the McKittrick

[1] The name here proposed dedicates this new form to Donald R. Dickey, ornithologist and mammalogist of Pasadena, California.

specimen is distinguishable only by its size. None of the other geese approach the swan in magnitude, while *B. dickeyi*, although one and a half millimeters shorter than the *Cygnus* specimen, is of appreciably heavier shaft. The close approximation in size makes easier a comparison of the two bones.

Viewed from the anterior face the swan's tibia is more slender and tapering in the shaft but with slightly greater diameter through the condyles. This difference might disappear if the goose were younger and the swan were older, although plumage indicates the maturity of the swan. The entire distal end of the bone is swung over farther toward the sagittal plane in the swan, while all the genus *Branta* as well as *Anser* show much less of this displacement. (See accompanying figures.)

When viewed from the distal end in a line of sight parallel with the shaft of the bone, a marked difference is seen between the two. In *Cygnus* the condyles are separated anteriorly by a more open arch; the inner condyle exceeds the outer by a larger quantity; the angle included between the inner and the outer profiles is greater; the distance between the bottom of the intercondylar notch on the anterior side and the corresponding point on the posterior side is less than in the fossil specimen. These differences hold good when comparing the Recent brants with the small *Cygnus coscoroba* from Patagonia.

MEASUREMENTS

	B. dickeyi	*C. columbianus*
Total length, excluding cnemial crest	177.0 mm.	178.5 mm.
Transverse diameter through condyles	22.4	22.9
Antero-posterior diameter through condyles	20.8	21.4
Least transverse diameter of shaft	10.0	9.5

University of California, Southern Branch, Los Angeles, June 9, 1924.

NOTES ON SOME BIRDS FROM TILLAMOOK COUNTY, OREGON

By ALEX. WALKER

DURING several years' residence in Tillamook County, Oregon, the writer has collected or observed a number of species not recorded by Mr. Stanley G. Jewett in his three papers relating to the birds of this region. (See CONDOR, XVI, 1914, p. 107; XVIII, 1916, p. 74; XXIII, 1921, p. 91.) Following is a list of the species which, with one or two exceptions, have not hitherto been recorded from this county.

Brachyramphus marmoratus. Marbled Murrelet. One specimen was found dead on the ocean side of the Netarts sandspit, December 20, 1920.

Mergus americanus. American Merganser. A common resident along the mountain streams. On June 6, 1920, a Merganser was seen entering a cavity some thirty feet up in a large stump near the Nestucca River at Blaine, and I have often noted broods of young in June. A farmer at Blaine reports that a pair nested in a hollow tree far up on a hill and at a considerable distance from water. The stomach of a Merganser shot on the Tillamook River, December 1, 1914, contained forty salmon eggs.

Mareca penelope. European Widgeon. Netarts, November 27, 1922. (See CONDOR, XXV, 1923, p. 70.)

Marila marila. Greater Scaup Duck. One was taken on Netarts Bay, December 21, 1920.

Chen hyperboreus hyperboreus. Snow Goose. A lone Snow Goose was taken when it alighted in a meadow at Blaine, October 29, 1921. The following week a number were seen at Netarts, sometimes in small bands, occasionally single individuals in flocks of other geese.

Anser albifrons gambeli. White-fronted Goose. An immature bird of this species struck a telephone wire and was captured, a few miles southeast of Tillamook, September 15, 1921.

Branta canadensis hutchinsi. Hutchins Goose. One specimen was taken at Blaine, April 16, 1923.

Philacte canagica. Emperor Goose. Netarts, December 31, 1920. (See CONDOR, XXIII, 1921, p. 65.)

Squatarola squatarola. Black-bellied Plover. Two were seen and one taken October 1, 1921, on the mud flats of Netarts Bay.

Zenaidura macroura marginella. Western Mourning Dove. One dove was seen near Blaine in September, 1919; and two or three pairs noted in May and June, 1922, were nesting. Since this species does not occur in the lower valleys it is probable that it is gradually extending its range from the Willamette Valley westward through the Coast Range by way of the narrow upper valleys where the cultivated areas are yearly increasing.

Aquila chrysaetos. Golden Eagle. A Golden Eagle was observed a few miles southeast of Tillamook, November 22, 1914. I approached within a few yards of the bird, perched upon a stump, before it took wing.

Falco columbarius suckleyi. Black Pigeon Hawk. A single example, flying over the mud flats of Netarts Bay, was collected October 1, 1921.

Nyctea nyctea. Snowy Owl. Usually a rare winter visitant. In the winter of 1916-17, these beautiful birds were common at Netarts and on Tillamook Bay, where they were observed to feed extensively on wounded ducks.

Cryptoglaux acadica. Saw-whet Owl. A specimen was taken at Blaine, August 17, 1919, and another was picked up dead September 1, 1922.

Asio flammeus. Short-eared Owl. In December, 1917, an owl of this species was seen ten miles south of Tillamook in a marshy place bordering the Tillamook River, and a specimen was collected at the same place on August 20, 1922.

Glaucidium gnoma californicum. California Pygmy Owl. This little owl does not appear to be common, but it has been observed in nearly all months of the year. The stomachs of five specimens collected between September 27 and November 22, contained, with the exception of one meadow mouse, the remains of grasshoppers only, and the contents of other stomachs examined would indicate that insects constitute the greater part of the Pygmy Owl's diet. Small birds are occasionally captured. One stomach contained the remains of a Western Golden-crowned Kinglet; and on August 12, 1920, a farmer at Blaine brought to me alive an immature Pygmy Owl that had just killed one of his young chicks. Another specimen taken at Blaine, November 12, 1919, had just captured and was in the act of killing a lizard, *Gerrhonotus principis*.

Dryobates villosus orius. Sierra Woodpecker. A light breasted *Dryobates* collected at Tillamook, January 13, 1916, was identified as *orius* by Mr. H. C. Oberholser.

Asyndesmus lewisi. Lewis Woodpecker. During the first few years of my residence in Tillamook County, this species was rarely seen. Early in the summer of 1919 two pairs nested in the Fairview district east of Tillamook, and in the late summer and fall of the same year I found it to be the most common woodpecker in the upper Nestucca Valley. At Blaine it nests commonly in the tall stumps or snags, and in autumn frequents apple orchards where it does considerable damage to the fruit.

Colaptes auratus borealis. Boreal Flicker. A fine male Yellow-shafted Flicker taken at Blaine, November 3, 1921, was identified by Mr. H. C. Oberholser as *borealis*. A number of hybrid flickers were collected at Blaine in the winter of 1921-22. These show considerable variation in plumage, some most closely resembling either the yellow-shafted or red-shafted forms, while others are intermediate between the two.

Tyrannus verticalis. Western Kingbird. Apparently rare west of the Coast Range. A pair taken a mile north of Tillamook on May 9, 1918, constitutes my only record.

Pica pica hudsonia. Magpie. On October 8, 1919, three Magpies, apparently a small roving band, were seen at Blaine. A day or two later they were seen in the mountains a couple of miles east of Blaine, and soon afterward they were noted by a farmer some distance to the south.

Nucifraga columbiana. Clark Nutcracker. Like the Magpies noted above, a Clark Nutcracker taken at Blaine, October 12, 1919, was probably only a straggler to the Coast Range.

Agelaius phoeniceus caurinus. Northwestern Red-wing. A rather common resident, particularly in the vicinity of Tillamook. A few also nest in the Nestucca Valley.

Hesperiphona vespertina montana. Western Evening Grosbeak. Flocks of grosbeaks are occasionally seen in March and April. One flock near Blaine, under observation for several days in March, 1920, fed extensively on seeds of the broadleaf maple.

Passerculus sandwichensis sandwichensis. Aleutian Savannah Sparrow. A specimen collected on the tidelands of Netarts Bay, October 27, 1922, was identified as of this subspecies by Mr. J. Grinnell.

Passerculus sandwichensis brooksi. Dwarf Savannah Sparrow. Arrives early in April and becomes fairly common in the meadows around Tillamook. Specimens collected at Tillamook, June 30, 1915, and July 12, 1916, have been referred to this, which is doubtless the breeding race. In the fall these sparrows are sometimes observed feeding among the drift logs on the ocean beach.

Zonotrichia albicollis. White-throated Sparrow. A specimen was collected at Blaine, October 25, 1923. This appears to be the first time that the species has been recorded from the Oregon coast.

Junco oreganus shufeldti. Shufeldt Junco. Breeds not uncommonly in this county. A nest examined near Tillamook, May 18, 1922, contained four eggs. Abundant in winter, associating with the northerly Oregon Juncos (*J. o. oreganus*) that winter here.

Passerella iliaca fuliginosa. Sooty Fox Sparrow. Several fox sparrows taken at Tillamook and Blaine have been referred to this form.

Stelgidopteryx serripennis. Rough-winged Swallow. One was collected and several others noted along the Tillamook River, May 30, 1916. These swallows were often observed to pause in flight before openings in the bank of the stream, a probable indication that they were nesting. Common at East Beaver in May, 1924.

Lanius borealis. Northern Shrike. A specimen was taken at Blaine, October 31, 1919.

Dendroica coronata hooveri. Alaska Myrtle Warbler. One specimen was taken in a willow grove near Tillamook, April 28, 1919.

Telmatodytes palustris paludicola. Tule Wren. One was collected in a marshy place near the Tillamook River on December 25, 1917, and two others were secured on the tide flats of Netarts Bay, October 27, 1922.

Certhia familiaris occidentalis. California Creeper. A rather rare resident in the coast region. Noted but once at Tillamook and Netarts, and a few times at Blaine, in April and September.

Tillamook, Oregon, June 6, 1924.

FALL MIGRATION NOTES FROM THE SAN FRANCISCO MOUNTAIN REGION, ARIZONA

(WITH TWO PHOTOS)

By HARRY S. SWARTH

(Contribution No. 424 from the Museum of Vertebrate Zoology of the University of California)

DURING the fall of 1922 the present writer spent two months in field work in the vicinity of San Francisco Mountain, Arizona. This work was conducted in conjunction with Dr. Francis B. Sumner, of the Scripps Institution for Biological Research, and his assistant, Mr. Ralph R. Huestis. The expenses of the trip were defrayed in part by Mr. E. W. Scripps, through the Scripps Institution, in part by Miss Annie M. Alexander, through the Museum of Vertebrate Zoology. Dr. Sumner was in charge of the expedition, the main object of which was a study of certain small rodents of the region explored. (See "The supposed effect of the color tone of the background upon the coat color of mammals," by F. B. Sumner and

Fig. 47. DOVE TANK, NEAR DEADMAN FLAT; ARTIFICIAL STORAGE OF SURFACE WATER IN A REGION WITH FEW PERMANENT SPRINGS AND STREAMS. PHOTOGRAPHED OCTOBER 11, 1922.

H. S. Swarth, Journal of Mammalogy, vol. 5, May, 1924.) Mammal collecting took up all of the time of Dr. Sumner and Mr. Huestis, and a large portion of my own. I did give some time to birds, however, keeping notes on all species observed, and, especially in the latter part of our stay, collecting specimens of many of the species. Most of the mammals and all of the birds I collected, together with field notes and photographs, are in the Museum of Vertebrate Zoology.

The following notes are presented mainly for their value as statements of occurrence. Our time in the field covered most of the period in the fall when birds were actively migrating, and in many cases I was able to ascertain exact dates of arrival and departure. I believe there have been few observations of the sort from this section.

We arrived at Flagstaff on September 3, and on September 5 we established a permanent camp 21 miles northeast of that city. This was on Deadman Flat, northeast of the main San Francisco Peak and a little northwest of O'Leary Peak. This section has recently been opened to settlement, and several ranchers are attempting, more or less experimentally, to raise crops of various sorts by dry farming. We were able to establish ourselves comfortably in a cabin belonging to Mr. Carr H. Schwarz, for living quarters and work shop. Our meals we obtained at the nearby ranch house of Mr. W. J. Osborn. To Mr. and Mrs. Osborn and their family, and to Mr. Schwarz, we are indebted for many kindnesses. The interest they took in our work and the aid they gave us were important factors in making a success of our trip, and it is a pleasure here to make acknowledgment of our indebtedness.

The region about San Francisco Mountain is historic ground to the zoologist. In 1851 the Sitgreaves expedition traversed this section en route from Santa Fé, New

Fig. 48. LOOKING TOWARD DEADMAN FLAT FROM THE SOUTH, AT THE LOWER EDGE OF THE YELLOW PINE BELT. PHOTOGRAPHED OCTOBER 12, 1922.

Mexico, to San Diego, California. Dr. S. W. *Woodhouse, naturalist attached to the* party, made collections and reported upon the natural history of the expedition.[1] From the printed account it is evident that Sitgreaves' route led directly across the section where our own work was pursued. We were there at the same time of the year and it proved of decided interest to compare our own day-to-day observations with the diaries printed in Sitgreaves' report.

During August and September, 1889, San Francisco Mountain again served as a field for zoological observations, this time by a party under the direction of Dr. C. Hart Merriam. Observations of the birds are included in the report subsequently published.[2]

[1] In "Report of an Expedition down the Zuni and Colorado Rivers," by Captain L. Sitgreaves, Washington, 1853; 198 pp., 77 pls., map.

[2] Results of a Biological Survey of the San Francisco Mountain Region and Desert of the Little Colorado, Arizona. U. S. Dept. Agric., N. Amer. Fauna no. 3, 1890, pp. 1-136, pls., figs.

In view of Merriam's detailed description of the region there is no need of going into particulars here, but there are some points that it seems well to emphasize. Our headquarters was in the piñon belt, and most of our work was done there. Many short trips were made into the yellow pine belt, at a slightly higher altitude, and several to points above the limits of the yellow pine. This whole region is extremely arid. There are no running streams and very few springs, and there is in consequence a marked scarcity of certain types of small birds, of the sorts that frequent such shrubbery as appears in the vicinity of streams. In the piñon belt and in the yellow pine belt there is very little underbrush.

At a few places in the pines, and more numerously at lower levels, gullies have been dammed to check the flow of surface water, with resulting reservoirs, primarily for the use of cattle, that are locally known as tanks. These become filled with water as a result of winter snow and of the heavy thunder storms of midsummer, and they diminish in size at other seasons. Some of the larger tanks attract a few passing water-fowl.

The plains at the base of San Francisco Mountain are at an altitude of about 6000 feet, and in consequence of this high elevation the winters are rather severe. When we arrived, the first of September, the summer heat was still intense, and warm weather continued until early in October. On the morning of September 24 the green belt of quaking aspen, conspicuous on the higher slopes of San Francisco Mountain, was seen to have suddenly developed spots of brilliant yellow and orange, an indication of the first frost at that height. A few days later the green had all changed to yellow, and early in October there was a light frost at the level of our camp. On October 27 a light rain that began to fall late in the afternoon changed to snow during the night, the beginning of a storm that lasted three days. When I left for home, November 2, the weather had not been warm enough to melt the fallen snow to an appreciable extent.

Erismatura jamaicensis. *Ruddy Duck.* One seen October 15 on a tank some thirty miles north of San Francisco Mountain. There were flocks of larger ducks on the same tank, too far distant to be identified.

Fulica americana. *American Coot.* Several seen at the same time and place as the last mentioned species.

Totanus melanoleucus. Greater Yellow-legs. Two seen October 15, at a tank some thirty miles north of San Francisco Mountain.

Oxyechus vociferus vociferus. Killdeer. Seen throughout September and October, usually a single bird or two together at the edge of a tank.

Columba fasciata fasciata. *Band-tailed Pigeon.* One seen September 14, at about 10,000 feet on San Francisco Mountain. Reported from the same mountain by Woodhouse, but not found by Merriam. According to local report it occurs sometimes in fair abundance.

Zenaidura macroura marginella. *Western Mourning Dove.* In fair abundance during the first two weeks in September. A single bird appeared October 29; none had been seen for the previous six weeks.

Circus hudsonius. Marsh Hawk. Seen frequently during September; became rare by the middle of October. An adult male was seen on October 29, drifting over the prairie in a driving snow storm.

Accipiter velox. Sharp-shinned Hawk. Seen at frequent intervals; last noted October 27.

Accipiter cooperi. Cooper Hawk. Seen, rather infrequently, until October 12. Two killed, not preserved, while attacking poultry.

Astur atricapillus. Goshawk. Two seen circling overhead at Deadman Flat September 11.

Buteo borealis calurus. Western Red-tailed Hawk. Seen frequently during the whole of our stay.

Archibuteo ferrugineus. Ferruginous Rough-legged Hawk. First seen October 9. Fairly common thereafter, and seen to the end of my stay, November 1. On one occasion a Ferruginous Rough-leg and a Western Red-tail were seen perched on the ground about twenty feet apart, each with a freshly killed prairie dog.

Aquila chrysaëtos. Golden Eagle. Of frequent occurrence. Sometimes five or six seen in one day.

Falco mexicanus. Prairie Falcon. Encountered at frequent intervals during the whole of our stay. Once observed in pursuit of domestic pigeons in Flagstaff, and several times after poultry about ranch houses. The one specimen preserved was shot while making off with a chicken.

Falco columbarius, subsp.? Pigeon Hawk. Two seen on the outskirts of Flagstaff, October 31 and November 1, respectively.

Falco sparverius sparverius. Sparrow Hawk. Common during September, and early in October. A single bird seen October 31 was the only one noted after October 15.

Otus asio, subsp.? Screech Owl. The call of a screech owl was heard several times during the night of October 15 in piñon and juniper woods thirty miles north of San Francisco Mountain.

Bubo virginianus, subsp.? Horned Owl. Heard hooting occasionally; apparently not numerous.

Dryobates villosus leucothorectis. White-breasted Woodpecker. A few seen, mostly in the pine woods. Late in October individuals occasionally strayed down to lower levels.

Sphyrapicus varius nuchalis. Red-naped Sapsucker. Two seen October 13 in junipers near a tank.

Sphyrapicus thyroideus nataliae. Williamson Sapsucker. First noted September 14, in the pines, and on several occasions thereafter. On October 10, 11, and 17, others were seen in junipers, far from the mountain.

Asyndesmus lewisi. Lewis Woodpecker. A few seen near Flagstaff early in September.

Colaptes cafer collaris. Red-shafted Flicker. Fairly common, mostly in the pines during September; descending into the piñon and juniper woods in October.

Phalaenoptilus nuttalli nuttalli. Poor-will. Last seen September 29.

Aëronautes melanoleucus. White-throated Swift. A few seen at irregular intervals.

Sayornis sayus. Say Phoebe. A few seen early in September.

Empidonax griseus. Gray Flycatcher. An immature male, still undergoing the post-juvenal molt, was collected in juniper woods September 6. An unidentified *Empidonax* seen October 5 was the only other individual of this genus that was seen.

Otocoris alpestris leucolaema. Desert Horned Lark. The horned larks collected all appeared to be migrants. During the first two weeks in September they were rare. Then flocks appeared more and more frequently, and by the middle of October they were abundant, though restricted to certain favored localities. The twenty-eight specimens collected, from September 11 to October 26, appear to belong all to the same subspecies.

Cyanocitta stelleri diademata. Long-crested Jay. Abundant in the pines along the road between Deadman Flat and Flagstaff. Decidedly rare in the pine woods on the northern slope of San Francisco Mountain. Merriam speaks of its occurrence "everywhere from timber line to the lower part of the cedar belt," but I saw none in the piñons and junipers. Two immature birds collected September 14 are in the midst of the post-juvenal molt. In the northern subspecies, *stelleri* and *annectens*, this molt is usually accomplished by the end of August.

Aphelocoma woodhousei. Woodhouse Jay. Rather uncommon, and, as noted by Merriam, usually "shy and difficult to procure." Restricted to the piñon-juniper belt. In the lower portion of this belt there are far more junipers than piñons; in the upper portion the piñons preponderate markedly. The Woodhouse Jay was always among piñons, although this year there were no cones on any of the trees. The juniper woods,

bearing a fairly plentiful crop of berries, were seldom entered; in fact I did not see a single Woodhouse Jay in certain sections where there were nearly pure stands of juniper.

Corvus corax sinuatus. Southern Raven. Beginning October 10 a few ravens appeared, apparently migrating. At any rate, these scattered companies, containing from three to ten individuals, were always drifting in a southerly direction.

Nucifraga columbiana. Clark Nutcracker. A few seen at high altitudes, above the yellow pine belt.

Cyanocephalus cyanocephalus. Piñon Jay. Abundant and in flocks numbering hundreds of individuals throughout the piñon-juniper region. Failure of the crop of piñon nuts had left these jays without their usual food, and they were doing considerable damage to some ranch crops. Certain fields of corn and beans were raided constantly. Curiously enough there were other fields, around which the jays were seen daily, which they never touched. I was told that ordinarily, with a normal supply of piñon nuts, the jays did not damage cultivated crops. There was no indication of an exodus of the birds as a result of the absence of their usual food.

Xanthocephalus xanthocephalus. Yellow-headed Blackbird. Occasional individuals appeared in the corn fields or else about the Osborn ranch house. Seen from September 16 to October 7.

Agelaius phoeniceus fortis. Thick-billed Red-winged Blackbird. Migrating southward in small numbers, never more than eight or ten in a flock. First seen October 7, and from then on until my departure.

Sturnella magna hoopesi. Rio Grande Meadowlark.

Sturnella neglecta. Western Meadowlark. Meadowlarks were present in the region when we arrived, September 1, but whether or not both species breed there, could not be ascertained. Eleven specimens of *hoopesi* and three of *neglecta* were collected, but this is no indication of their relative abundance. A special effort was made toward securing *hoopesi*, and the call-notes and songs of the two species are so different that there seldom was any doubt as to which kind I was pursuing. Meadowlarks were plainly migrating southward. They would be present in a field one day and absent the next, and flocks were seen again and again that were rapidly drifting in a southerly direction, walking and feeding on the ground and always flying in the same general direction when disturbed. For *hoopesi* to be migrating southward through this part of Arizona is an indication that the breeding range extends some distance farther north, probably into southern Utah and perhaps into southwestern Colorado. By the third week in October Meadowlarks had become very scarce, but some were seen on October 31.

Specimens of *hoopesi* collected September 9 and 11 were molting from juvenal to first winter plumage. On October 9 several Meadowlarks were seen that were molting, so as to be able to fly but with difficulty. Wing and tail feathers had apparently been lost almost all at once, and were but partly replaced.

It is of interest to compare the occurrence of these two species in this region with Wetmore's reports of conditions in the vicinity of Bill Williams Mountain (Kansas University Science Bulletin, IV, Sept., 1908, p. 381; CONDOR, XXIII, March, 1921, p. 62).

Euphagus cyanocephalus. Brewer Blackbird. Seen during September and the first half of October. Usually about barns and corrals.

Carpodacus cassini. Cassin Purple Finch. First seen October 17 at about 8000 feet altitude on San Francisco Mountain. After the heavy snow storm of October 28-30, Cassin Purple Finches appeared in numbers in the lowlands. Between Deadman Flat and Flagstaff flock after flock was seen feeding in weed patches alongside the road.

Carpodacus mexicanus frontalis. House Finch. First appeared September 19, a single bird. A few others were seen, never more than three or four together, at long intervals.

Passer domesticus. English Sparrow. First seen at Deadman Flat on October 7. That morning I was standing in the yard of the Osborn ranch when, with a whirr of wings, a flock of about twenty English Sparrows, all females, swooped from the sky and settled down in the chicken yard. I shot three and the survivors, rising high in the air, flew to the northward until out of sight. Later on, other flocks were seen, both here and in the town of Flagstaff.

Their manner of occurrence at Deadman Flat is plainly indicative of a tendency to wander at the close of the breeding season, even though there is no established migration route to be followed. It shows one way in which the species spreads, and the manner in which the birds will pick out an isolated ranch for occupancy. I have never seen an English Sparrow drop down into "wild" country in the manner in which they constantly came to this and other nearby ranches.

Astragalinus psaltria hesperophilus. Green-backed Goldfinch. A few seen from time to time on the road between Deadman Flat and Flagstaff. Last noted October 17.

Calcarius ornatus. Chestnut-collared Longspur. An abundant migrant. A single bird seen September 18, three together September 20, and then flocks every day. Last observed October 26.

Rhynchophanes mccowni. McCown Longspur. One specimen collected October 16. A few others were seen in company with the abundant Chestnut-collared Longspur.

Pooecetes gramineus confinis. Western Vesper Sparrow. Present when we arrived, September 1, and in increasing numbers for about two weeks. By September 15 swarms of Vesper Sparrows arose everywhere one went in the grass land and rabbit-brush. On September 19 their numbers had decreased markedly, and by October 1 they were rather scarce. Last seen October 11.

Passerculus sandwichensis nevadensis. Nevada Savannah Sparrow. None present early in September. First seen September 20 and abundant for some days thereafter. On September 29 they were swarming in the grass land and in cultivated fields but nearly all were gone on the 30th and none was seen later. Two birds were collected, both distinctly referable to *nevadensis*.

Chondestes grammacus strigatus. Western Lark Sparrow. Seen in fair abundance early in September, mostly along the road between Deadman Flat and Flagstaff. They disappeared early in October.

Zonotrichia leucophrys leucophrys. White-crowned Sparrow.

Zonotrichia leucophrys gambeli. Gambel Sparrow.

Two specimens of the subspecies *leucophrys* were shot on September 21, the first arrivals. White-crowned sparrows of one kind or the other were seen occasionally from then on, never in abundance. On October 18 the last were noted; several seen that day were definitely recognized as *gambeli*.

Spizella passerina arizonae. Western Chipping Sparrow. Seen from the lower part of the yellow pine belt downward. Abundant during September and in lessening numbers early in October. Last seen October 17.

Spizella breweri. Brewer Sparrow. In fair abundance on Deadman Flat during September. Exact time of departure was not noted, but no observation of this species was recorded in October.

Junco hyemalis hyemalis. Slate-colored Junco. A male bird seen near the lower edge of the yellow pine belt (about 7500 feet altitude) on October 27, in a small flock of *shufeldti* and *caniceps*.

Junco oreganus shufeldti. Shufeldt Junco. Arrived October 8. Seen thereafter in fair abundance, mostly in the piñon-juniper belt, but also upward to the lower edge of the yellow pines.

Junco mearnsi. Pink-sided Junco. First seen October 17 at about 7500 feet altitude. A few noted at irregular intervals during the rest of my stay, usually single birds in flocks of *shufeldti* and *caniceps*.

Junco caniceps. Gray-headed Junco. An adult female collected October 1 on Deadman Flat was the first migrating junco of any kind to appear. By the middle of October *caniceps* was present in fair abundance, in the piñon-juniper belt to some extent, but in greater numbers in the yellow pine belt. Flocks of juncos were frequently encountered composed of as many as fifty or sixty individuals. Nine-tenths of such a flock would consist of *caniceps* and *shufeldti* in about equal numbers, with a few *mearnsi* and perhaps an occasional *hyemalis*.

Junco dorsalis. Red-backed Junco. The breeding species of Junco. Found by me in the same sections as are designated by Merriam, "throughout the upper levels of the pine plateau region and in the balsam and spruce belts." One specimen was collected in juniper woods September 28, accompanied by another that was supposed to be of the same kind. This was the only occasion on which *dorsalis* was seen below the yellow pine belt. When the migrating northern juncos arrived, the mixed flocks of

caniceps, shufeldti and others were abundant at the lower edge of the pines and in the piñons and junipers, but no specimen of *dorsalis* was found in any of these aggregations. I found *dorsalis* at a higher altitude, in small flocks, and never accompanied by any other species.

On September 14, specimens were collected that were still in molt, some young birds with remnants of the juvenal plumage. The species was still abundant at the end of October, and is probably permanently resident.

Amphispiza nevadensis nevadensis. Sage Sparrow. First seen at Deadman Flat September 25. Ten days later a few more appeared and by October 17 they were present in fair abundance. At the end of the month the Sage Sparrows had disappeared again, but it might be that they had merely been driven to lower levels toward the Painted Desert by the storm that, during the last week in October, covered the higher country with snow.

Pipilo maculatus montanus. Mountain Towhee. Of rare occurrence. Three specimens collected, on September 8, October 10 and October 13, respectively, and two or three others seen at long intervals, were all that were noted. Those collected were found in juniper woods, where they must be merely of transient occurrence.

Oberholseria chlorura. Green-tailed Towhee. Fairly common throughout September. Last noted October 2, though probably present for another week at least.

Piranga hepatica. Hepatic Tanager. Seen once, an adult male, September 14, in the yellow pine belt, at about 7500 feet altitude.

Petrochelidon lunifrons. Cliff Swallow. A few seen migrating overhead on September 12.

Hirundo erythrogaster. Barn Swallow. Seen migrating during September. Last noted September 30.

Iridoprocne bicolor. Tree Swallow. A few seen migrating September 12.

Tachycineta thalassina lepida. Northern Violet-green Swallow. Migrating in fair abundance during September. Last seen September 28.

Stelgidopteryx serripennis. Rough-winged Swallow. A few seen migrating September 9.

Bombycilla cedrorum. Cedar Waxwing. Two seen October 16 feeding on juniper berries.

Lanius ludovicianus excubitorides. White-rumped Shrike. Seen at intervals during September and early in October, always in the piñon-juniper belt. Last noted October 17.

Dendroica aestiva, subsp.? Yellow Warbler. A few migrating Yellow Warblers were seen near Flagstaff September 4 and 5.

Dendroica auduboni auduboni. Audubon Warbler. Seen in small numbers early in September. On September 23 the species was fairly abundant at the lower edge of the yellow pine forest, and a little later many appeared in the piñon-juniper belt. Last seen October 19.

Dendroica nigrescens. Black-throated Gray Warbler. A rare migrant. Several were seen on September 7, one on September 13, and one (the last noted) on September 22, all in the piñon-juniper belt.

Wilsonia pusilla pileolata. Pileolated Warbler. One seen September 24.

Anthus rubescens. Pipit. First seen October 17 and occasionally thereafter.

Oreoscoptes montanus. Sage Thrasher. First seen September 11; a few days later this became the most abundant bird species in the piñon-juniper belt. The Sage Thrashers were obviously migrating, and some days all the birds seen would be rapidly moving southward, an advancing army really impressive in numbers. Scores were in sight at once on the ground, running from bush to bush, others were taking short flights through the trees, and still others were in scattered companies overhead, almost like flocks of bluebirds in flight. The usual call-note is a harsh *chuck*, suggestive of that of a blackbird, but some thrashers were heard giving fragments of their striking song from perches in the junipers.

By the middle of October the number of Sage Thrashers had markedly diminished. On the 20th none were seen, but on the 23rd two appeared, the last observed.

Salpinctes obsoletus obsoletus. Rock Wren. Very few seen. Usually on lava flows.

Catherpes mexicanus conspersus. Cañon Wren. A few seen or heard on lava and in rocky gulches on the lower slopes of San Francisco Mountain.

Thryomanes bewicki eremophilus. Desert Wren. One seen September 19, and one collected September 29 (both in junipers) were all observed.

Troglodytes aëdon parkmani. Western House Wren. One seen at the lower edge of the yellow pines September 8. Not otherwise observed.

Certhia familiaris montana. Rocky Mountain Creeper. One collected October 27 on the northeast slope of San Francisco Mountain at about 8000 feet altitude; the only one seen.

Sitta carolinensis nelsoni. Rocky Mountain Nuthatch. In small numbers at the lower edge of the yellow pines, and occasionally in the piñons and junipers.

Sitta canadensis. Red-breasted Nuthatch. One bird seen October 17 at about 8000 feet altitude on the northeast slope of San Francisco Mountain. Not otherwise observed.

Sitta pygmaea pygmaea. Pygmy Nuthatch. Fairly abundant in the yellow pine belt, but not once encountered in the piñons and junipers just below.

Baeolophus inornatus griseus. Gray Titmouse. Closely restricted to the piñon-juniper belt. Not abundant anywhere; at the most perhaps six or eight might be seen in a forenoon.

Penthestes gambeli gambeli. Mountain Chickadee. Fairly common in the lower part of the yellow pine forest and throughout the piñon-juniper belt. On October 16 my eye happened to be caught by a single Mountain Chickadee coming straight down from high overhead, to alight in an isolated juniper. This seems clear evidence of migration.

Psaltriparus plumbeus. Lead-colored Bush-tit. Not at all common. Small flocks were encountered at long intervals, near the upper limit of piñon and juniper and in the lower portion of the yellow pines.

Regulus satrapa olivaceus. Western Golden-crowned Kinglet. In Woodhouse's report on the natural history of Sitgreaves' Expedition down the Zuni and Colorado Rivers (1853), there is casual reference to the occurrence of this species on San Francisco Mountain (p. 68, under *Parus montanus*). The date of observation would have been somewhere from October 9 to 22. There was no more definite record for Arizona until Cooke (Auk, 1914, p. 404) reported a specimen taken by C. Birdseye, September 14, 1908, in the White Mountains. On October 24, in a clump of Douglas fir near the upper edge of the yellow pines, at 7500 feet altitude on the northeast slope of San Francisco Mountain, I heard the lisping note of the Golden-crowned Kinglet. I collected one bird and heard one or two others. It was interesting thus to be able to corroborate Woodhouse's observation of many years before, and at a point that must have been within a few miles of where he crossed the northern shoulder of the mountain.

Regulus calendula calendula. Ruby-crowned Kinglet. Several seen at high altitudes on San Francisco Mountain September 14, two at Deadman Flat September 29, and one at 8000 feet altitude on San Francisco Mountain October 27.

Polioptila caerulea obscura. Western Gnatcatcher. Two seen at Deadman Flat September 6. Not otherwise observed.

Myadestes townsendi. Townsend Solitaire. Appeared in the piñon-juniper belt September 28, when two were seen. By the middle of October they were abundant, and remained so through the month. On October 11 about sixty Townsend Solitaires were in sight at once about a small "tank".

Planesticus migratorius propinquus. Western Robin. Abundant in the juniper thickets, where they were feeding on the berries, the latter part of September and throughout October.

Sialia mexicana bairdi. Chestnut-backed Bluebird. Seen in some numbers in the yellow pine region near Flagstaff upon our arrival there, September 3. A few days later they appeared at Deadman Flat, and in increasing numbers during September and throughout October.

Sialia currucoides. Mountain Bluebird. As with *S. m. bairdi* this species was seen early in September in the yellow pine belt, and a little later at Deadman Flat. During the latter part of October both species of bluebirds were extremely abundant in the juniper thickets. On October 25, at Dove Tank, there was a solid mass of bluebirds congregated at the water's edge that I estimated to contain two hundred or more individuals, a brilliant blue margin bordering one entire side of the tank. About two-thirds of the flock were *currucoides*.

Berkeley, California, December 20, 1923.

FROM FIELD AND STUDY

Badger Digs for Bank Swallows.—The Bank Swallow (*Riparia riparia*) from its habit of nesting in holes in the faces of steep banks would appear to be able to raise its brood in comparative safety. As I was walking today (July 20) along the edge of a cut bank overlooking the Frenchman River, under which is a colony of these birds, I noticed several fresh badger holes, and at the mouth of each one feathers of various kinds. Then I came upon a dead half-fledged swallow and realized that the badger had been digging down from above and making a meal of young swallows. There were about six holes and a few scratches besides, about six inches deep, where the badger had started to dig and then desisted; which shows, I imagine, that the badger was guided to strike the nest below by his sense of smell or possibly of hearing.—LAURENCE B. POTTER, *Gower Ranch, Eastend, Saskatchewan, July 20, 1924.*

The Black Phoebe as a Fisherman.—Upon May 18, 1924, having occasion to visit my former residence in Pasadena, I noted a Black Phoebe (*Sayornis nigricans*) making sallies onto the surface of a pool in which goldfish are kept, and investigation disclosed an interesting state of affairs. This, presumably, was the same individual that has used this place as a hunting ground for the greater portion of the last two years. From a station on a nearby post, or plaster frog upon the margin, it was in the habit of making frequent sallies over the surface of the water in quest of the numerous insects to be found in such situations. My attention was particularly attracted on the above date by the fact that the bird was actually diving into the water, its head entirely disappearing in pursuit of prey at least two inches below the surface. After watching this action repeated with variations several times, I quietly investigated and discovered that there were numbers of young goldfish, about half an inch in length, swimming in the pond, but that there were no aquatic insects which I could discern similarly engaged. I am entirely satisfied in my own mind that this bird was capturing, or trying to capture, the young fish. The evidence, however, is purely circumstantial, for the actions of the fisherman were too swift for me to learn whether or no he was successful. As they were no longer my fish, and my sympathies lay entirely with the bird, I pursued the enquiry no farther.—A. B. HOWELL, *Pasadena, California, June 7, 1924.*

Do Birds or Other Animals Interpolate the Third Dimension?—I have often heard it said that a dog does not recognize its own image in a mirror because it lacks the ability to interpolate the third dimension. In connection with this theory, an experience which came to my notice just a few weeks ago may prove of interest.

A Robin was seen to hop on the running-board of an automobile while the car was standing at the curb. The car was a brand new one and well polished, and the Robin suddenly discovered his image reflected in the polished surface of the car. He ran up and down the running-board and at intervals attacked the image beside him. Discouraged with his success, he would turn away from the car and sit on the edge of the running-board for a moment and then, glancing backward, he would still see the phantom Robin sitting beside him, whereupon he would return again to the attack. Occasionally, he would glance upward and there in the overhanging part of the car, he would see another Robin, which he would promptly proceed to attack by flying upward along the side of the car, following the image to the windows of the car, where it would, of course, disappear.

This procedure would sometimes continue over a period of five or ten minnutes, and it must have happened a good many times in the course of several days, because I saw it repeated every noon for two or three days. Evidently the Robin had no difficulty in recognizing his image.—CARL LEOPOLD, *Burlington, Iowa, May 6, 1924.*

Breeding of the Ancient Murrelet in Washington.—On May 9, 1924, I took a female Ancient Murrelet (*Synthliboramphus antiquus*) and two eggs from a burrow on Carroll Island, Washington. I gave the eggs to Mr. J. Hooper Bowles, of Tacoma, who informs me that they were on the point of hatching. The bird is now in the Santa Barbara Museum of Natural History and Comparative Oology. As far as I can learn this is the first record for the breeding of this bird south of British Columbia.—RALPH HOFFMANN, *Carpinteria, California, July 18, 1924.*

California Condors Breed in Captivity.—In May, 1924, while on a visit to the National Zoological Park, Washington, D. C., I was interested to learn of repeated attempts on the part of the California Condors (*Gymnogyps californianus*) to breed there. This was news to me and may be to others. The Condors constituted to me the chief attraction in the park. Three fine adult examples there live in a spacious "flying" enclosure.

In 1898, I saw seven California Condors about a carcass in the mountains of northern San Diego County, California; yet careful search has failed to reveal even one Condor in that locality within the past five years. Although I have seen all together quite a number of Condors in the wild, I have never seen Condors that seemed healthier or in better color or feather than those three captive individuals in Washington.

Mr. Ned Hollister, Superintendent of the Park, has kindly furnished me with the following data. All three Condors were received as birds-of-the-year from Mr. W. B. Whitaker of Piru City, California. The first individual was received at the zoo on July 19, 1901; the second arrived September 7, 1903, and the third came on September 21, 1903. Two of the birds are supposed to represent a mated pair, while the sex of the third individual is unknown. The three birds are of equal size. Mr. Hollister says he has not been able to tell the sexes apart. Outside of the mating season it is difficult or impossible to pick out the mated pair. There is no strife; all three birds live together in real harmony. Mr. Hollister has refused to part with the third bird, for fear it might have a bad effect on the remaining pair.

The captive Condors bred for the first time when they were twelve years old. Mr. Hollister believes that this marks the age when Condors normally reach maturity. The birds have "nested" three times, but one or more seasons have elapsed between nesting periods. In each case, the single egg was laid upon the bare wooden floor of a large shelter or roost which was placed well above the ground. In every instance the egg proved to be infertile. In the first two instances the Condors incubated the egg for several weeks. In the third case the freshly laid egg was taken out and artificially incubated, but again the embryo failed to develop. Although now twenty-one and twenty-three years old, these Condors appear to be in the prime of life, and the excellent housing and attention which they receive lead us to hope that they will continue to live for many years to come.—JOSEPH DIXON, *Museum of Vertebrate Zoology, Berkeley, California, July 15, 1924.*

White Wing-markings in the Heermann Gull: A Record from the Past.—I have recently received from Mr. Ruthven Deane a postal card written by Dr. J. G. Cooper, the subject matter of which seems of sufficient interest to place on record, even at this late date. It was written at a time when Mr. Deane was gathering data on albino birds, and is evidently a reply to queries along that line. It was addressed to "Ruthven Deane, Esq., Cambridge, Mass.", and is worded as follows: "Hayward, Cal. Nov. 12 '78. Dear Sir, I never got but one albinescent spec. in Cal. a Larus Heerm'ni with a white patch ½ size of this card on middle of each wing, that is across 2ndy quills. It looked very pretty in the air, like a new sp. but when I shot it I found no other difference. I have seen pale brown & mottled *Dendrocygna fulva* & blotched *Bernicla Gambeli*, imperfect albinos of *T. migratorius* & *Scolecoph.* but they are rare here yet. Yours etc. J. G. Cooper."

Inscribed across this writing is a postscript, "Dr. Brewer may have this Larus in hand now."

It will be recalled that Willett (CONDOR, vol. 20, May, 1918, p. 122) has recorded the capture of Heermann Gulls (*Larus heermanni*), both by himself and by L. E. Wyman, that were marked as Dr. Cooper described so many years before. Willett's record stimulated P. A. Taverner (CONDOR, vol. 20, September, 1918, p. 187) to describe a similar specimen from British Columbia; and yet others have been recorded (C. L. Hubbs, CONDOR, vol. 21, May, 1919, p. 121). Evidently this peculiarity of the Heermann Gull, noted as a novelty by present-day collectors, is one of long standing.—H. S. SWARTH, *Museum of Vertebrate Zoology, Berkeley, California, May 1, 1924.*

An Unique Blackbird.—An extraordinary bird specimen was collected near Santa Clara, Utah, in March, 1923. Examination showed that it was a Sonora Red-winged Blackbird (*Agelaius phoeniceus sonoriensis*) with an abnormal bill. The usual length

of the bill in this subspecies is given as .89–1.00 inches. In this specimen the upper mandible is 2.1 inches long, while the lower mandible remains of normal length. It was an adult male and very fat, showing that the bird was surviving in spite of this

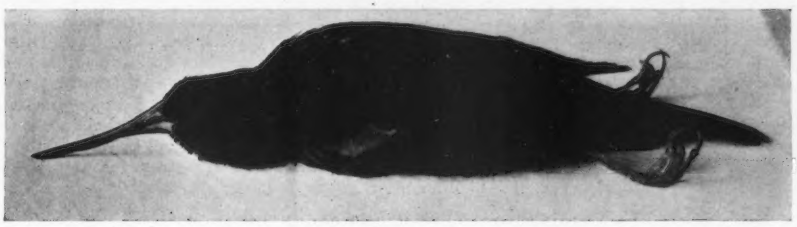


Fig. 49. A BLACKBIRD WITH A STILT'S BILL.

handicap. An examination of the digestive tract revealed that the recent diet was entirely of weed seeds. After the above picture was taken of it, this non-conformist was skinned and stuffed.—VASCO M. TANNER, *Biological Department, Dixie College, St. George, Utah, July 26, 1924.*

Do Bird Families Have Any Permanency?—THE CONDOR having become the medium for a discussion of this point, the writer submits a contribution. The drift of Miss Sherman's article in the May-June issue (vol. 26, no. 3, pp. 85-88) is that flocks of a number of species of birds are not formed by the aggregation of families. In this matter, as in most natural history subjects, we shall find probably that there is nothing like a universal rule. Whistling Swan and Canada Geese families I am sure from personal observation retain their identity at least to midwinter. On Currituck Sound, N. C., when large flocks of these birds are undisturbed for a period they gradually separate out in groups. In the case of the swans the fact that these are families is evident at a glance, the grayish necks of the cygnets making them easily distinguished from the adults. When one sees the birds grouped in this way, two white-necked, accompanied by 2 to 3, and rarely by as many as 5, gray-necked ones, and sees not one, but scores, and even hundreds of such groups, he becomes convinced that he has under observation swan families. When at ease the geese group in the same way, the families in this species generally numbering from 5 to 9. This grouping is well known to all the baymen, of course, and is accepted without question as indicating family ties among the birds; comment on the success of the last breeding season is based on the size of these subdivisions of the flock. There are notable variations in this respect in different seasons, the pairs of swans some years having from 1 to 3 cygnets each, and in others from 3 to 5.

While the writer knows these things from his own observation, he thought it well to write for confirmation to his old friend, Mr. Jasper B. White, of Waterlily, N. C., who has lived with the waterfowl of Currituck Sound for an ordinary lifetime. Mr. White not only gives the desired confirmation but adds further interesting data showing that family ties do mean something among these birds. His father had a pair of Canada Geese which were mated for 42 years; when the male was then accidentally killed the female died in a few months. Mr. White, the son, had an identical experience with the female of a pair that had been mated over 20 years. Game breeders report that Canada Geese have decided preferences about mating. Two specimens or any multiple of that number will not pair, merely because the sexes are equally divided. By no means; it seems they must fall in love, much as human beings do, but once mated, they set an example for constancy that may be equalled, but is never surpassed, among mankind.

The evidence pertaining to ducks is conflicting. We observe that drakes are promiscuous, and we know that in some species at least they desert the females when incubation gets under way, form bachelor gatherings, and even migrate, after the

molt, in exclusively male flocks, yet ducks kept for use as live decoys seem to remain permanently paired the same as the geese. These ducks often are wing-tipped Mallards or Black Ducks, or their immediate descendants, and it is not clear why captivity should change their nature so far as mating fidelity goes. Nevertheless, these birds form permanent pairs, a fact taken advantage of by the gunners, who separate the pairs when using them for decoys, thus inducing the females to call more vigorously and more frequently. Pairs, of which one member has been left on shore all day, recognize each other at a distance when the decoys are brought in; whether this is by voice or otherwise the writer does not presume to say, but he has observed the animated, even excited, behavior of the expectant ones and the chorus of greeting, and eager though awkward and brief caresses upon their reunion. These birds are reported by their owners to pair for life, and the writer is fain to believe the report; yet in some species of wild ducks it would seem from the habits of the birds that permanent pairing is impossible.—W. L. McAtee, *Washington, D. C., July 3, 1924.*

Period of Incubation of the Golden Eagle.—On Washington's Birthday, February 22, 1924, Guy O. Glazier, a member of the San Diego Society of Natural History, took from the nest of a Golden Eagle (*Aquila chrysaetos*) near his ranch in Dehesa Valley, San Diego County, a single Golden Eagle's egg, which was all the nest contained at the time. He undertook to hatch the egg by means of hens, three consecutive Rhode Island Red hens being required to take charge of the egg before it hatched, on the forty-first day, or April 3, 1924. The eaglet Mr. Glazier was able to keep alive for three weeks, when it died and its body was presented to the Natural History Museum, Balboa Park.

Mr. Glazier stated that his object in removing the egg from the nest was to induce the birds, if possible, to desert the nest in which they had started to lay and move to another nest-site in which they had evinced interest earlier in the season. This site was nearer to his home and he hoped that he and his visitors might have the pleasure of seeing the birds more often. His experiment was successful to the extent that the birds made the desired move and deposited the second egg in the other nest. However, it was deserted shortly thereafter.—Clinton G. Abbott, *Natural History Museum, Balboa Park, San Diego, California, June 25, 1924.*

The Natural End of a Bird's Life.—In the process of nature every living thing must pass away; yet how many persons have actually seen a wild bird die from natural causes? Many people have found birds that were already dead, and many, no doubt, have seen birds meet a violent death—as, for instance, by flying against wires, or when captured by a hawk. But never yet have I heard any person speak of observing even one individual—from the millions of birds he may have seen—die from other than an external cause. I have been studying birds for the last seventeen years, ten of which have been spent in field work, and the following case is the first occurrence of the kind that has entered into my experience.

About 6:30 on the morning of April 4, 1924, I was quietly skinning birds on the screen-porch of my home in San Diego when my attention was attracted by an unusually loud chipping which I recognized as that of an Audubon Warbler (*Dendroica auduboni*), although the tone seemed queer and unnatural. The voice sounded so full of distress that I left my work and started to search a nearby thicket of roses from which the sound came, thinking that perhaps the bird was being alarmed by a stray cat. To my surprise, I discovered a female Audubon Warbler ascending a vertical rose stem in a peculiar spiral manner. It continued the ascent rapidly to the very top of the bush, chipping at the top of its lungs all the time, and then launched itself into the air, flying in upward spiral circles, still chipping, until it had reached a height of about ten feet above the bush. There it suddenly closed both wings and fell to the earth, dead.

I picked up the bird and examined it externally with great care, but could find not even a parasite. The specimen was later prepared as a study skin and a thorough examination was given the internal organs, with no diagnostic results; in fact, both the crop and the stomach were empty. The bird was fully adult, in nuptial plumage,

and died presumably from some natural cause—hardly old age, it would seem, in view of the peculiar energy manifested at the close of its life.—LAURENCE M. HUEY, *Natural History Museum, San Diego, California, April 28, 1924.*

Four Species New to North America.—The four species of birds new to the North American list here recorded were collected by R. W. Hendee and the writer on the expedition of the Colorado Museum of Natural History to northwestern Alaska, and will be dealt with in greater detail in the report of the expedition, now in course of preparation. We are indebted to Dr. H. C. Oberholser and Mr. Outram Bangs for identifying the specimens.

Dafila acuta acuta (Linnaeus), male, Wales, Alaska, May 31, 1922, A. M. Bailey.

Dafila acuta acuta (Linnaeus), female, Wainwright, Alaska, July 19, 1922, R. W. Hendee.

Nettion formosum (Georgi), male, Wainwright, Alaska, September 2, 1921, A. M. Bailey and R. W. Hendee.

Pisobia ruficollis (Pallas), female, Wales, Alaska, June 11, 1921, A. M. Bailey.

Pisobia ruficollis (Pallas), sex?, juv., Wainwright, Alaska, August 15, 1922, R. W. Hendee.

Calidris tenuirostris (Horsfield), male, Wales, Alaska, May 28, 1922, A. M. Bailey. —ALFRED M. BAILEY, *Curator of Birds and Mammals, Colorado Museum of Natural History, Denver, June 4, 1924.*

Sacramento's Western Martin Colony.—A recent search of THE CONDOR failed to bring out very many facts regarding the nesting of the Western Martin (*Progne subis hesperia*) in California cities. Grinnell, in his "Distributional List," describes this bird as "interruptedly distributed as a breeding species along and west of the Sierras, south into San Diego County," suggesting that it nests in oak and pine regions and in small numbers in towns—as, for instance, Pasadena, Los Angeles, Stockton, and Auburn. Several have written of the colony in Placerville. In my experience, this bird nests in larger colonies in cities than elsewhere and because of the size of the colonies is more conspicuous. A visit to Pasadena any time during the summer discloses large numbers of these birds around the main office buildings of the city. Similarly, Santa Ana has a colony. My mental pictures of scattering nesting in the oak and pine belt bring views of Weed, Siskiyou County, and an old pine stub on Mount Wilson, in the Sierra Madre Mountains, which harbored one pair.

This note has been inspired by discovering six Western Martins nest-hunting around the cornice of the Clunie Hotel Building on K Street, Sacramento, on April 24, 1924. A glance skyward showed several other martins in flight above the city. On a visit to Sacramento during the middle of July of last year, martins were very numerous in the downtown district and their chattering was to be heard everywhere. They seemed to swarm about buildings along the alley between J and K streets near Fourth and Fifth streets. The numerous light-colored birds indicated young out of the nest.—HAROLD C. BRYANT, *Museum of Vertebrate Zoology, Berkeley, California, May 17, 1924.*

Song of the Gray Flycatcher.—On May 26, 1924, while crossing the Indian Reservation between Klamath Falls and Lakeview, Oregon, my attention was called to the song of an *Empidonax* in some small pines in rather open dry woodland. The notes were decidedly more emphatic and vigorous than the songs of either the Wright or Hammond flycatchers. I wrote them down *chi-weép, chi-weép.* After observing the bird for a time, I shot it. Mr. Grinnell has confirmed my determination and pronounces the bird *Empidonax griseus.* If the notes heard from this bird are typical, the species when in song can readily be distinguished from its congeners.—RALPH HOFFMANN, *Carpinteria, California, July 18, 1924.*

Notes upon Certain Summer Occurrences of the Gray Flycatcher.—In the recently published "Birds of California," Mr. Dawson's description of the nesting habits of the Gray Flycatcher (*Empidonax griseus*) attracted my attention at once, it was so

strongly in accord with certain unpublished data in this Museum, which, as it happened, I had just had occasion to bring together. While this information has no longer any claim to originality, as pointing to the nesting ground of this hitherto elusive species, it seems worth while to place it on record. It is all corroborative of Mr. Dawson's contentions.

We have what appear to be breeding birds from the Pine Forest Mountain region, northern Nevada; from the Warner Mountain region, northeastern California; and from the White Mountain region, east central California. There are also series of *Empidonax wrighti* from the same mountain ranges, and it was the presence of obviously mislabeled specimens in one series or the other that happened to attract my attention. I then carefully went over all the specimens of *wrighti* and *griseus* in the Museum collection, with interesting results.

From the Pine Forest Mountains, Nevada, we have a fairly large series of *E. wrighti*, mostly breeding birds from high altitudes. Included in this series I found four specimens of *griseus*. Three of these (Mus. Vert. Zool. nos. 8561, 8562, 8563) were breeding birds (from annotations on labels or in the collectors' notebooks) taken in sagebrush at Quinn River Crossing, on May 22, May 29, and June 2, 1909, respectively. One young bird, full grown but in juvenal plumage (no. 8580), was taken in the Pine Forest Mountains at 9000 feet altitude, July 31, but this capture cannot be regarded as constituting a breeding record.

From the Warner Mountains, Modoc County, California, we have nine specimens of *wrighti*, all breeding birds and all collected from 5500 feet altitude upward. Four specimens of *griseus* were taken (June 9 and 10, 1910, and May 20 and 25, 1920, respectively) in the valley below, in the general vicinity of Alturas. There is also a breeding *griseus* from a nearby locality (mouth of Little High Rock Cañon, Washoe County, June 1, 1920) in the lowlands of Nevada. From the White Mountains, California, we have thirteen specimens (breeding birds and young from the nest) of *wrighti* taken at altitudes ranging from 8300 to 10,300 feet. These were originally catalogued as *griseus*, but, although the color differences between this species and *wrighti* are somewhat obscured in badly worn specimens, there is no doubt that all of these birds are *wrighti*. From this same mountain range there are at hand five specimens of *griseus*. Two of these, from the dates of capture, were certainly breeding birds. These were taken July 5 and 7, 1917, respectively, "2½ mi. s. e. of Head of Black Canyon," at an altitude of 8000 feet. Despite the high elevation, this locality, I am informed, is in the Transition Zone, with an abundant growth of sagebrush, so the species is not necessarily out of place there. Two other adult *griseus* were taken, respectively, at the head of Silver Canyon (altitude 10,000 feet), July 29, 1917, and again at the head of Silver Canyon (altitude 8000 feet), August 21, 1917. It is not certain that they were breeding at the exact places where they were collected.

In an article in THE CONDOR (vol. 24, July, 1922, p. 137) Dickey and van Rossem record the capture of certain specimens of *griseus* in the White Mountains at high elevations (8000 to 10,000 feet) and draw the inference that these birds (wholly or partly in juvenal plumage), taken August 27, September 3 and 4, were probably hatched somewhere in the near vicinity. This may or may not have been the case. As before indicated, the Transition Zone ascends to 8000 feet in the White Mountains, and *griseus* doubtless follows the sagebrush upwards. Any of these young birds, however, might have traveled many miles. I myself have collected juvenal plumaged birds of various species (including *Empidonax griseus*) that must have gone a surprisingly long distance from where they were hatched. It may suffice to cite here, as an example near at hand, a young Desert Sparrow (*Amphispiza bilineata deserticola*) in juvenal plumage throughout, that I collected above timber line in the Sierra Nevada, at Charlotte Lake (10,406 feet), near Kearsarge Pass, September 3, 1916.

Some of the confusion that exists regarding the relationship of *griseus* and *wrighti* is probably due to faulty observations in the field. This does not imply criticism of those who have made observations in the past; for the two species, of course, require the most painstaking discrimination; but future studies and records should be prefaced by careful consideration of existing facts. It seems safe to prophesy that certain apparently anomalous occurrences now on record will find their explanation in conditions that were overlooked at the time those observations were made. It is evident

from Mr. Dawson's evidence, from the record by Alexander Walker in THE CONDOR (vol. 16, 1914, p. 94) which first gave Dawson his clue, from the statements in Grinnell and Storer's "Animal Life in the Yosemite" (pp. 373-374), and from additional corroborative facts that I have found in the collection of the Museum of Vertebrate Zoology, that *Empidonax griseus* is an upper Sonoran and Transition Zone species, confined in the breeding season mainly to sagebrush surroundings in the Great Basin. *Empidonax wrighti* nests mainly in the Canadian Zone, occasionally in the Hudsonian Zone, from southern California north at least to extreme northern British Columbia. Any apparent overlapping of breeding ranges (as is claimed to occur in the White Mountains) is doubtless to be explained either by the upward extension locally of lower zones, thus carrying *griseus* to an altitude where *wrighti* usually breeds, or else as an unwarranted assumption of nesting from the mere occurrence of birds (juvenal or adult) outside their normal nesting ground.—H. S. SWARTH, *Museum of Vertebrate Zoology, University of California, Berkeley, April 21, 1924.*

Early Nesting of the Junco on the Berkeley Campus.—On March 16, 1923, the writer watched a female Junco (*Junco oreganus*, subsp.?) carrying nesting material. It was thus possible to find the nest, which proved to be located just west of the University Library. In this case the site was on the ground and the nest was well concealed by a dense mat of ivy. Building operations were completed and the first egg laid on March 23. At 6 o'clock on the evening of March 26 the nest contained four eggs which the female had begun to incubate.

At 9 A. M. on April 9 the nest contained two eggs and two young which had hatched since the previous evening. Only two out of the four eggs hatched. The fledglings left the nest on April 16 when only seven days old. They were not at that time able to fly, but scrambled about readily beneath the tangled ivy and eluded my grasp easily. Here, as is often the case with the Nuttall Sparrow on the Campus, the early departure of the young from the nest was seemingly hastened by the presence, in the nest, of numerous Argentine ants.—JOSEPH DIXON, *Museum of Vertebrate Zoology, Berkeley, California, June 15, 1924.*

WITH THE BIRD BANDERS

Under the Direction of J. Eugene Law, Altadena, California

White-throated Sparrow Banded on the Stanford Campus.—During the Christmas vacation two funnel traps were set in the plots of low thorny shrubs in front of the University Library. The catch consisted principally of Golden-crowned Sparrows, with a few "White-crowns," a Song Sparrow, and on December 26 a White-throated Sparrow (*Zonotrichia albicollis*) which received band no. 124066. This was the first living specimen of White-throat that many of us here had seen. The golden splash on the superciliary stripes from the bill to above the eyes, and the white throat sharply contrasted with the gray breast, quickly identified the bird by key; but for better proof it was compared with four skins in the collection from the Eastern States. My first comment upon the bird was "a great little fighter" in contrast to the golden and white crowned species. During the remaining days of the vacation, and later in February when the traps were reset at that locality for two weeks, it failed to repeat.—ERNEST H. QUAYLE, *Stanford University, California, April 27, 1924.*

A Third White-throated Sparrow Banded.—In the work of bird banding, at 8 A. M., April 10, 1924, I captured in Lincoln Heights, Los Angeles, California, a White-throated Sparrow (*Zonotrichia albicollis*). It was released bearing band no. 93452.—ELBERT BENJAMINE, *Los Angeles, California, April 10, 1924.*

The return of these birds this autumn will be looked for with unusual interest in view of the rarity of the species in California, and of Mrs. Allen's experience with the first one banded in the state (see CONDOR, vol. 25, p. 141). No effort should be spared to recapture these three birds.

A Correction.—By an inexcusable inadvertence the name of Miss Jessica A. Potter was omitted from the list of charter members of the Los Angeles Bird Banding Chapter. Miss Potter was one of the first to enlist and is an enthusiastic worker at all times. Her recapture at 1118 Santee Street, Los Angeles, on January 26, 1924, of House Finch no. 84437, which was banded by Mrs. Ella H. Ellis at 910 Grattan Street, Los Angeles, on October 31, 1923, is notable since these stations are more than a mile apart and on opposite sides of the main business section of the city. Both stations are in back yard gardens of closely settled districts.

Gambel Sparrow.—Harry S. Swarth, of the Museum of Vertebrate Zoology at Berkeley, California, engaged in field work this summer in company with Allan Brooks, at Atlin, near the northwest corner of British Columbia, included in his outfit a tiny collapsible trap and an assortment of bands. In a letter dated at Atlin, July 19, 1924, he writes: "I looked at the trap mistrustfully a long time, but finally mustered up courage to install it in our yard (we have a cottage in Atlin). In about 15 minutes there were two birds in it, a Junco and a White-crowned Sparrow, and I was scared stiff—worse than the birds! However, I managed to band them, and since then I have banded about a dozen more White-crowns (*Z. l. gambeli*). Look for them in Altadena next fall!"

Now for a broad front of traps to pick up Swarth's banded Gambel Sparrows! It is our first opportunity to retake in their winter home migrants which were banded at their nesting home in the Far North. With this species traversing in winter nearly the whole length of the Pacific slope, and with nearly a hundred banding permittees now in California alone, recaptures may well occur. Gambel Sparrows should be looked for in southern California from September 15 on; earlier, no doubt, farther north.

Then there is another problem that banders can help solve. If all banders will see to it that their traps are working every morning from mid-September until the Gambel Sparrows arrive, so that the first arrivals will be recorded, a tabulation can be made of the progress of these birds as they come south. Let everyone cooperate in this effort to measure the speed of travel of the vanguard. Retakes will give us clues to their routes. And as any station will constantly pick up new birds, activities should not relax throughout the season, lest Swarth's birds escape detection. A like "drive" should be made for a record of the migration of the Golden-crowned Sparrow.

Western Trap.—In THE CONDOR for September, 1923, a bird cage trap was described, which used a drop door and a trip doorstep. To this we have given the name "Western Trap." Adapted to a 6-compartment trap, each compartment with its own door, the drop door scheme has been very successful. This "6-cylinder" trap with 3 compartments on each side, each compartment 5 inches wide, 8 inches high and 8 inches long, is best when made of ¾-inch mesh "chicken screen." Thus built it seems to catch any bird which can be baited to its vicinity, and when a bird gets in, it stays until it is taken out. Many birds learn to escape from the so-called funnel traps, and a bird working in the funnel often keeps out the whole flock.

Potter Trap.—This is another adaptation of the drop door scheme, with the ends, sides, and top so hinged by simple "hog rings" (such as farmers put in hogs' noses) that the trap can be folded flat, and thus a number of them can be easily and inconspicuously carried about. Miss Jessica A. Potter, who worked out this plan, carries two of the traps in a neat shopping bag when she goes a-banding. The trap has two compartments and is made of ½-inch mesh "hardware cloth." It is appropriately called the "Potter Trap."

Arrangements have now been made in Los Angeles for the manufacture of both the Potter Trap and the 6-compartment Western Trap, and they will be distributed to those who want them at actual cost.

Vest Pocket Trap.—In passing, it may be of interest to describe the "Vest Pocket Trap" that I made for Swarth. Of ½-inch mesh hardware cloth, it folds to a parcel ½ x 6½ x 9 inches. The ends are 6 x 6½, sides and top each 6½ x 9. Round ½-inch paper-clips hinge the top to each side and end. Two oblong paper-clips, at each side of each end piece, project through the apposing end of each side piece, and lock the corners when wire rods are slipped into the projecting ends of the clips, a rod for each corner. The entrance, which is cut out of one end, eliminates all but 3 vertical strands

at either side, and 1 at the bottom, thus cutting out 7 vertical and 7 horizontal strands. The door consists of 3 pieces of the hardware cloth, each 3 strands wide by 11 long, clipped close (as are all other pieces) so that no projecting ends are left. These 3 pieces are hinged and hung by the round clips inside the door opening. The trip doorstep is the same as that described in THE CONDOR for September, 1923, except that one reverses it so that the "goose-neck" is farthest in the trap, and the "nose" or "crook" of the goose-neck bends over the step instead of away from it. The door is rolled up on itself inside the trap and supported by the crook of the goose-neck with the doorstep tilted and resting on the edge nearest and just inside the door. With the materials at hand, ½-inch hardware cloth 24 x 18 inches (dealer will cut it into the pieces for you), paper-clips (anybody's office), and 30 inches of baling wire, anyone can fabricate this trap in a few minutes.

Depauperizing.—It has been asserted that a "food table" makes dependents of the birds. Reconstructed, this means that food plenty incapacitates birds for hunting food when it becomes scarce, a conclusion which is hard to believe. Obviously bird life drifts toward a food table and tarries there, just as it does to any other center where food is abundant; but the mere fact that man and not "Nature" supplies it, can impose no unfavorable limitations on bird physiology. It is a bird's business to go where food is plenty, and a person need not look far to find birds gorging themselves on Nature's abundance.

By broadcasting "chick feed" daily in a yard well filled with brushy cover, I have attracted an unbelievably large bird population, portions of which seem settled and other portions nomadic; for right in the midst of plenty, seasonal instincts hold fast, and whole populations move out.

In nesting time, for instance, I have counted 24 red Linnets at one time on the wires about the place. Now, in early August, there is not one here, though juvenals are common enough, with a few, at least, females. Green-tailed Towhees tarried this year for 25 days, apparently in direct response to abundant food, and were in full song before the last one left. Twelve were banded. Lincoln Sparrows, hitherto undetected at this Sonoran mesa station, were seen almost daily from March 1 to April 18, eating the seed we scattered; there were at least 3 of them, two of which carried away bands nos. 52291 and 80072. A Song Sparrow called on October 16, 1923, for band no. 52117, and returned February 18, 1924, to register, tarrying 3 days. Golden-crowned and Gambel Sparrows literally swarmed all winter, but abundance of food could not hold them after early May. Food supply had to yield to primitive instincts in every case.

All of which goes to show that we banders need have little fear of disrupting Nature's plans if we feed liberally, and that our chances of detecting passing migrants are materially increased by so doing. Moreover, in any definite study by trapping and banding (plumages, molts, populations, migrations), quantity of material is important, and an abundance of birds adds pleasure and zest to the work. By all means scatter food. A daily ration of chick feed and dry bread (ground up in a meat grinder) will entertain a multitude.

Breeding Colonies.—On May 22, 1924, Wright M. Pierce and I undertook to band the nestlings in a large colony of Tricolored Red-wings, at a small tule-filled lake 4 miles north of Laguna Beach, California. In 9 hours' time, working together, we banded 554, ranging in age from 3 days old to those ready to leave the nest. Many others were too young to band.

Our bands were strung serially on long wire "safety pins" made to hold about 75 bands each. The pin that was in use was snapped through a buttonhole. Another more circular safety pin held the pocket lens in a convenient place. Work was done in hip boots. Pierce picked up a bird while I opened a band and handed it to him. He pinched the band on with his thumb and finger and I finished with the pliers if needed. Between nests I recorded in a notebook, with frequent checks of the number on the band.

On June 10, 1924, we banded 22 young, all we could find, in a small colony of Yellow-headed Blackbirds at Big Bear Lake in the San Bernardino Mountains, California.—J. EUGENE LAW, *Altadena, California, August 10, 1924.*

EDITORIAL NOTES AND NEWS

Through the thoughtful interest of Mr. Bradshaw H. Swales, THE CONDOR is able to publish the accompanying two photographs, taken forty years ago in the office of the Division of Birds in the South Tower of the old Smithsonian Building in Washington, D. C. Aside from the personal interest attaching to these portraits of Stejneger and Ridgway when comparatively young men, there is the historical interest in the setting. For many years, 1868 to 1885 about, this was the most active center for ornithology in North America. It was here that most of Baird, Brewer and Ridgway's "North American Birds" was written, and Stejneger's volume on "Birds" in the Standard Natural History series, besides an enormous mass of lesser contributions.

Contributors of articles or notes to THE CONDOR ought to know some of the conditions that confront the Editor. When matter of an urgent nature is intended for any given issue, the manuscript must be in the hands of the Editor not later than the first of the month preceding the month in which the issue in question is to appear. The Editor, or his associate, is responsible for the reading of three proofs on the entire contents of each issue. This means the allowance of adequate time for transmittal of materials back and forth between the Editor and the printer; and there is the further factor that manuscript and proofs cannot be given attention in the Editorial Office save as time for it does not conflict with other duties which necessarily take precedence. Then, too, experience shows that at least two weeks must be allotted for the shipment to our Business Managers and the mailing of an edition. The work on an issue that is to be mailed on, say, September 15, must be started on August 1. And we yearn for punctuality as regards date of publication. We invite our contributors to take these conditions into account.

Fig. 50. LEONHARD STEJNEGER WHEN 33 YEARS OLD; PHOTOGRAPH TAKEN IN SOUTH TOWER OF SMITHSONIAN BUILDING IN AUGUST, 1884.

What is the most written-about bird in California? This query has doubtless arisen from time to time in the minds of more than one student of California birds. It happens that there is now available some basis for reply, in that the Editor of THE CONDOR has recently been engaged in indexing his bibliography of California ornithology. The following appear to be the ten most celebrated birds in California, as judged by the number of times each name has appeared in the titles of published articles: (1) Band-tailed Pigeon; (2) California Condor; (3) Road-runner; (4) Meadowlark; (5) Valley Quail; (6) California Woodpecker; (7) English Sparrow; (8) Anna Hummingbird; (9) Wood Duck; (10) Brewer Blackbird. The order is that of frequency of mention. This order of popularity or notoriety is obviously based on such features as conspicuousness, importance from the standpoint of the sportsman (especially where there has been change in status), economic bearing otherwise, and novelty of appearance or habits.

An article the portent of which we strongly commend, appeared in the July, 1924, *Ibis* under the title "The Affinities of Some Nearctic and Palearctic Ducks." The author, Allan Brooks, it seems to us has made his case perfectly clear, which is as follows: the Redhead and the Old World Pochard are absolutely distinct, specifically, and are not two subspecies of one holarctic species, as has lately been declared with much show of finality. Indeed, it would be quite as reasonable to unite the Pochard with the Canvas-back. This statement the author backs up by a tabular analysis of characters and a set of text figures: the facts are made available to those who read. A coincident conclusion is that there is no ground whatsoever for placing the Canvas-back in a separate genus from the Redhead. In this same article facts are cited which argue against the allocation properly of the American Green-winged Teal and the European Teal as subspecies of one species. There are perfectly definite qualitative characters which separate the two—

Fig. 51. ROBERT RIDGWAY WHEN 34 YEARS OLD; PHOTOGRAPH TAKEN IN SOUTH TOWER OF SMITHSONIAN BUILDING IN AUGUST, 1884.

as distinct species. It is reassuring thus to find well-supported opposition to the present unfortunate tendency to reduce species which differ in relatively slight degree, but constantly, from one another, to subspecies of single species.

There has just appeared in the "Bulletin" series of the Museum of Comparative Zoology at Harvard College (vol. LXVI, pp. 1-209), Part I of "The Birds of the Lake Umbagog Region of Maine," by William Brewster. We are informed by Dr. Thomas Barbour that the manuscript for this posthumous contribution was left by its author in practically complete form—"almost absolutely ready for publication with hardly a change of a word or a comma." To those who were acquainted with the scholarly and painstaking work of William Brewster, this information comes as merely a corroboration of what we well knew to be his method. He did thoroughly whatever task he set for himself. It has long been known that Brewster's personal field interest centered for many years in the Lake Umbagog region of Maine, and that he was working toward a comprehensive account of the birds of that Boreal locality. There will be two further "parts" to complete his entire record. Brewster's own accurate observations are given in narrative form, in the excellent literary style for which his writings always were noted. Perusal of the accounts of species in Part I discloses a great deal of fact and philosophy new to our previous experience. In other words, we have here a contribution of real and lasting value. The only criticism that occurs to us is that the nomenclature has been "modernized" from the form in which doubtless it was left by Brewster. Brewster was himself conservative. He certainly would content himself, were he alive today, with the names as they stand on the A. O. U. Check-list. We hardly think he would subscribe, for instance, to "*Casmerodius alba egretta*" for the American Egret. The title page of the present "part" does not, unfortunately, give any indication as to who is responsible for such editorial emendations as the one just cited.

In the Saturday Evening Post of June 14, 1924, page 29, some one by the name of Kenneth L. Roberts includes in his vivacious and vivid word picture of the Pima desert of Arizona the following phrase: "gawky, long-necked, long-tailed black-and-white birds known as road runners dash madly ahead of the traveler, or plunge hysterically from one side of the road to the other . . .". We wonder to what extent readers of THE CONDOR will approve of this characterization of the Road-runner. If the above excerpt is a fair sample of the whole article with respect to accuracy of fact, we once more "deplore" the low standard of "informational" literature offered to, and accepted by, the public.

COMMUNICATIONS

CROW-SHOOTING CONTESTS

Editor THE CONDOR:

As an old member of the Cooper Ornithological Club and an earnest and practical bird conservationist, may I enter a vigorous protest and dissent to the resolution passed at the meeting of the Northern Division on March 27 condemning the proposed campaign against Crows and other vermin now being instituted by the Du Pont Powder Company? While recognizing that the system advocated by that Company is not ideal, and that it is open to several points of objection, still it is at present the only means we have of combating the increasing menace of the Crow.

The antagonists of the scheme base their main objection on the supposed lawlessness of those taking part in the destruction of Crows during the closed season, and also they are averse to the "extermination" of the Crow. As Californians you probably know better than I do what the moral attributes and law-abiding capacity of your countrymen are, and to what extent your game wardens are capable of coping with the proposed situation; but in British Columbia where the system of organized shoots in the closed season directed against Crows and other vermin has been in practice for several years, no violations of the game laws have been reported, nor am I aware of a single case where game has been shot by any member of these contests during the closed season.

That there is the smallest possibility of the extermination of the Crow or of any species of mammal or bird against which the campaign is directed is too absurd to be discussed seriously. The utmost we can hope for is to keep their numbers down to a considerable extent.

Your resolution condemns the system for the whole continent, not as applied to your State alone. While California as a

whole is singularly free from Crows, still there are portions where both Crows and Magpies exist in thousands and are increasing, to the immense detriment of the game supply. But it is in other regions that the Crow menace is at its worst; in the provinces of Alberta and Saskatchewan the increase in the last 15 years is as 20 to 1. In August of 1922, on the Alberta-Saskatchewan boundary, I saw flocks of migrating Crows which were 200 yards wide and reached from horizon to horizon. Fifteen years ago Crows were scarce in this region.

In southern British Columbia we must reckon the Sharp-tailed Grouse as a vanishing bird, in spite of permanent closed seasons, unless we can cope with the increase of the Crow and Magpie. Our only means to effect this at present is by organized warfare against these pests, undertaken by every sportsman and everyone else who honestly has the interests of bird conservation at heart.

That the Dupont people are undertaking their scheme solely to increase their ammunition sales is hardly logical. The trapshooters who will leave their favorite pastime in thousands to help mitigate the Crow menace would expend more ammunition by far at the traps than they would at Crow shooting.

To summarize: Crows and Magpies are the worst enemies we have to contend with in an effort to increase our bird population and game supply. The most effective way to reduce these is by destroying them during their breeding season, the season that they do the most damage to game and other birds. At other seasons they are much more wary and difficult to destroy. The bounty system has been proved too expensive. There are no regular gamekeepers or vermin destroyers. This leaves as our only means of defense an organized and advertised system of warfare against these pests, which are increasing their range and numbers out of all proportion to the increase of any other birds.—ALLAN BROOKS, *Atlin, B. C., 12 June, 1924.*

WHO IS TRYING TO GET MY GOAT?

Editor THE CONDOR:

While conversing yesterday with the British High Commissioner for the Western Pacific he smilingly asked me to deposit no more goats on islands under his jurisdiction. I instantly assured him that I had no intention of so doing and had committed the offense on but one occasion when, in the hope of benefiting future castaways, I had allowed my philanthropic instincts to overrule my gastronomic desires.

It appeared that an alarmed Briton living in England had recently written him, inquiring if he could send an expedition to Henderson Island, which lies some 3000 miles east of Fiji, to destroy a ravaging flock of goats, the nucleus of which I had placed there a couple of years ago. It further appears that the knowledge regarding the menacing character of the animals was gleaned from an article written in THE CONDOR a few months ago. I assume that THE CONDOR writer saw a descriptive attempt of mine in *Natural History*, a publication of the American Museum of Natural History, in which I mentioned placing three goats on Henderson, and I infer that my motive for depositing the livestock on the island has been entirely misunderstood.

To enlighten others whom it may concern, let me state the facts. The beasts were landed solely in the hope that the members of the next ship-wrecked crew that succeeded in getting ashore there would find living conditions easier than did the sailors of the wrecked ship *Essex*, two of whom lived to be rescued therefrom.

Possibly the mind of THE CONDOR scribe was fixed on the anticipated damage to the flora or fauna should the goats multiply to the extent that wild goats have done on other islands; but, I take it, he or she has visited but few tropical islands where wild goats have lived for decades and have merely succeeded in making a few trails and maintaining scattered cleared acres where the grass grows but a foot high instead of three feet or more.

Of the 20 or so islands where wild goats live, that I have hunted, but two showed serious damage to flora or fauna. On one of these, Guadalupe, off Lower California, the rainfall is evidently light and probably seasonal, while the other is of small extent, 100 acres or less, in the Gambier group.

On the other hand, the dry western side of Nukuhiva Island, in the Marquesas, where thousands of wild goats range, maintains a greater variety of bird-life in the goat-infested area than does the southern coast with its far more luxuriant vegetation, and though in the west some of the grasses are continually cropped no species shows a scarcity in number of individuals.

While but little wreckage remains long on Henderson, due to the cliff-encircled shores, one has but to glance at the upturned bottom of a large ship on Ducie Island lying east of Henderson, or to read the Pitcairn Island records of the seven ships known to have been lost on Oeno Island a couple of degrees west of Henderson, to realize the probability of similar future happenings on Henderson.

For the peace of mind of THE CONDOR objector and the questioning English gentleman, I might mention that, before debarking the ruminants, I tested for three days the forbidding character of the surface configuration of the island, and then unhesitatingly decided that the possible benefit to future ship-wrecked crews would completely overbalance possible damage to the few species of animal life occurring there; and I am prepared to maintain, with further facts, if necessary, that not a single plant or animal species is destined to be exterminated by my thoroughly considered action in liberating three goats on Henderson Island.—R. H. BECK, *Suva, Fiji Islands, June 18, 1924.*

PUBLICATIONS REVIEWED

SCLATER'S SYSTEMATIC LIST OF THE BIRDS OF AFRICA.*—A bare list of species is not generally thought of as a thing of thrilling interest. Especially forbidding might seem a list of birds of a continent which the reader had never visited, and consisting of names of species of which museum specimens, even, had never been given particular attention.

We recall Bradford Torrey's most engaging essay on "Reading a Check-list" (Field-days in California, 1913, pp. 160-169). Yet Torrey, in making his case so appealing, had the American Ornithologists' Union Check-list before him, and had the background of intimate knowledge of many of the species and places concerned. Let us see what an American can find of interest in a "Systema Avium Ethiopicarum."

In the first place, be it known, the list in question is the first offering in the projected series of bird lists, to be prepared on a standard, unified plan for the whole world. A joint committee representing both the British Ornithologists' Union and the American Ornithologists' Union has been working several years on the problem. The B. O. U. is held primarily responsible for the several Regions of the Old World, the A. O. U. for the Nearctic and Neotropical regions.

The present volume deals with the "first half of the list of the Birds of the Ethiopian Region." This Region is defined as that portion of the continent of Africa and corresponding portion of the Arabian Peninsula which lies south of the Tropic of Cancer, including also various islands in the Atlantic and Indian oceans. The system of classification adopted is based chiefly on the morphologic studies of Gadow (from the ostriches part way through the woodpeckers); and the nomenclature follows as strictly as possible the Rules of the International Zoological Congress.

The present list thus becomes of importance to an American, in that in it, we may assume, is adopted the general style of presentation which will be followed by the two American lists to be prepared for the same series in the future. The Nearctic list will supplant the present A. O. U. Check-list as the standard authority.

With regard to scientific names, very few indeed happen to be of species familiar to the reviewer. Naturally, there are very few birds that are the same in Africa and North America. The Fulvous Tree-duck is perhaps the only breeding species common to the two continents, aside from introductions. There are several other water-fowl, mostly ducks, in the migratory category.

Where there are the same genera in Africa and America we find that Sclater's names differ in some cases from those authorized heretofore by the A. O. U. Committee. Since we have Sclater's assurance that his manuscripts and "proofs have all been seen and approved by the committees in England and United States," we may conclude that the nomenclature of the African list will be adopted in the new American lists.† If this inference proves

* Systema Avium | Ethiopicarum. | A Systematic List of the Birds of | the Ethiopian Region. | By | William Lutley Sclater, M.A., M.B.O.U. | ——— | Prepared in conjunction with Special Committees of the British and American Ornithologists' Unions. | ——— | Published by the | British Ornithologists' Union | and sold by | Wheldon and Wesley, Ltd., 2-4 Arthur Street, | New Oxford Street, W. C. 2. [London] | 1924 [our copy received by purchase June 5]. Small 8vo, paper, pp. iv+304 (=part I).

† Since the above sentence was written, our confidence in this regard has been somewhat upset by reading in the July, 1924, *Auk* (p. 495) a statement by "W. S." to the effect that the proofs of the African list were *not* seen by the American committee!

correct, then we will return again to the inclusive duck genus *Anas*, for *Mareca*, *Chaulelasmus* and *Nettion* as well as the Mallard group. This is a very desirable thing, in our mind. We have had altogether an unreasonable degree of generic splitting in the Anatidae, as well as in some other Families. Furthermore, *Falco* is, in Sclater's list, the inclusive genus for the Sparrow Hawks (in the American sense), the Pigeon Hawks and the Duck Hawks. Evidently the recent raising of *Cerchneis* from sub-generic to full generic rank, as was done by the A. O. U. Committee, was unwarrantable. We note that *Proctopus* is given as the genus name to include the Eared Grebes.

Mr. Sclater had a large contract on his hands in providing vernacular names for all the great array of included species. For the most part, we think he has followed a consistent system. But he has slipped up in some places, in dealing with a series of subspecies, by giving the first subspecies a group name and the subsequent subspecies the same name with modifying terms; thus, Hairy-breasted Toothbill, Nigerian Hairy-breasted Toothbill, etc. Of course, logically, all in the group *are* Hairy-breasted Toothbills and the first should have been given an additional modifying designation along with the rest. We note a number of names that strike us as a good deal better than those in common use in the A. O. U. Check-list, for example, Lily-trotter for Jacana. For the most part, geographical names are used for subspecies—which is, as a rule, a helpful custom. There are rather too many personal names among the vernaculars. To a foreigner, some of the vernacular names are meaningless, though perhaps unavoidably so; for example, Kivu Lourie and Aldabra Coucal. Many of the names are intriguing: Fernando Po Chocolate-backed Kingfisher, Angola Yellow-beaked Hornbill, Sahara Chanting Goshawk, etc.

In a few cases, vernaculars on the African list are the same as those long employed in other parts of the world for other species. For instance, Africa has a Black Oyster-catcher, but it is *Haematopus moquini*. Duplication of vernacular names ought to be avoided in a world series of check-lists.

Finally, while English and German systematists figure by all odds most importantly in the nomenclature of African birds, we find the names of several American systematists, appearing in about the following order of frequency: Cassin, Mearns, Oberholser, Ridgway, Chapin, Bangs, Stone, Elliot, and Chapman.—J. GRINNELL, *Museum of Vertebrate Zoology, University of California, Berkeley, June 19, 1924.*

HOWELL'S BIRDS OF ALABAMA.*—In this report 314 species and subspecies are listed, not a large "state list" as compared with certain western ones, but of decided interest nevertheless by reason of its being both thorough and authoritative. Furthermore, Alabama is representative of quite a group of South Atlantic States which have been relatively backward in their ornithological development. The present exposition is a straightforward digest of all that is known to date about the birds of Alabama—state records or local distribution, seasonal occurrence, general habits, and food habits—just the information that an enquiring resident of that state or an all-round student of North American birds would want at command.

Of special interest to the latter type of reader are the facts Mr. Howell records with respect to the change in status of species within historical times. As is the case in nearly every other state, most of this change is in the direction of depletion, even if, as is the case with a few species, actual extermination has not already come to pass. We were particularly interested in the accounts of the Swallow-tailed and Mississippi kites, Carolina Paroquet, Ivory-billed Woodpecker, and "Southeastern" Raven, all of which are now nearly or quite gone.

The nomenclature is outstandingly down-to-date, reflecting the activities of the priority sharp and genus splitter to the *n*th degree. It is too bad that unsettled cases have to figure in connection with practical, every-day treatises on birds, such as is the present. A saving grace is the fact that the equivalent names on the A. O. U. Check-list are given in footnotes, with, also, accurate citations to the published places where discussions of

* Birds of Alabama | by | Arthur H. Howell | Assistant Biologist, Bureau of Biological Survey, | United States Department of Agriculture | ——— | Issued in co-operation with the | United States Department of Agriculture | Bureau of Biological Survey | Edward W. Nelson, Chief of Bureau | by the | Department of Game and Fisheries of Alabama | I. T. Quinn, Commissioner | [seal] | Brown Printing Company | State Printers and Binders | Montgomery, Ala. | 1924. Large 8vo, paper, 384 pp., 7 pls., 31 text figs. Our copy received May 21, 1924.

the various nomenclatural innovations are to be found. Much the better plan, however, would have been to employ the well-known A. O. U. names in the main headings and to give the ultra-modern renderings in the footnotes.

For a government publication the present book is printed on exceptionally good paper. Save for the few half-tone plates, the illustrations are printed on the same good text paper; and to accomplish this the figures were drawn in a style of coarse lines—with results that are rough upon close inspection, but which give a good distant effect in most cases. Indeed, figure 1, of the Least Bittern, and figure 17, of the Song Sparrow, both drawn by Robert J. Sim, possess high merit both ornithologically and artistically. Several of the illustrations numbered as figures are maps showing the ranges of near-related birds within the state.

The paper ends with a well-ordered Bibliography, of 107 titles, and an adequate Index. Beyond the first page of the Bibliography the right-hand page headings read "Biography"; but errors otherwise, anywhere in the volume, are exceedingly few, an indication of careful editing and good proofreading.

On the whole, Howell's Birds of Alabama takes forward position among the many state bird reports that have now appeared. Particularly commendable is the successful cooperation evidenced in the joint auspices of production, in the present case as between a federal bureau and a state department. It is to be hoped that other states, Texas, for example, will enter eventually into the same sort of effective arrangement.—J. GRINNELL, *Museum of Vertebrate Zoology, Berkeley, California, August 4, 1924.*

MINUTES OF COOPER CLUB MEETINGS

NORTHERN DIVISION

JUNE.—The regular monthly meeting of the Cooper Ornithological Club, Northern Division, was held at the Museum of Vertebrate Zoology on June 26, 1924, at 8 P. M. The meeting was called to order by President Dixon.

The following members were present: Misses Fisher, Hendren, Pringle and Van Gaasbeek; Mesdames Bamford, Bogle, Delport, Grinnell, Harding, Holden, E. B. Mead, Calvert Meade and Schlesinger; Messrs. Clabaugh, Dixon, English, Grinnell, Mailliard, McKibben and Trost. Sixteen visitors attended the meeting.

Minutes of the May meeting were read and approved. Minutes of the Southern Division for May were read. Mr. Grinnell called the attention of the Club to the newly-issued Part I of the Check-list of the birds of the world. Mr. Joseph Mailliard reported upon some interesting observations made and records taken this spring in northeastern California, and soon to be published.

The speaker of the evening was Mr. Joseph Dixon, who told most entertainingly of the two months' eastern trip which he had just completed. His talk dealt with many contrasting aspects of eastern and western life. Two points stressed by him offer suggestions to the Cooper Club: namely, the number of outing meetings enjoyed by eastern bird clubs, and the stimulus offered to bird observation by the reports at meetings of occurrences of migrants and accidentals.

At the close of Mr. Dixon's talk, Miss Chattin of the staff of the State Fish and Game Commission brought to the attention of the Club the deplorable condition of the bird-life of Lower Klamath Lake, and suggested that since it has been proved that the draining of the lake has not been of any value in the agricultural development of the Klamath region the Club express itself as in favor of the reopening of the water gates at Ady and the refilling of the lake. Mr. Joseph Mailliard, seconded by Mr. English, made the following motion:

"It is hereby moved that the Cooper Ornithological Club, Northern Division, heartily endorse the movement to open the water gates at Ady and refill the Lower Klamath basin, thus restoring to thousands of birds their natural breeding grounds; and also that the Secretary be instructed to bring this motion to the attention of all persons whose influence may be invoked to help bring about the desired action." The motion was unanimously carried.

Mr. Clabaugh announced the circulation of a petition to the Legislature to prevent hydro-electric companies from so damming the Klamath River that salmon will be prevented from ascending to their spawning grounds. At the close of the meeting many members availed themselves of the opportunity to sign the petition. Adjourned.—HILDA W. GRINNELL, *Secretary.*

JULY.—The regular monthly meeting of the Cooper Ornithological Club, Northern Division, was held at the San Francisco office of Mr. Milton S. Ray on July 24, 1924, at 8 P. M. The meeting was called to order by President Dixon. The following members were present: Misses Holden and Pringle; Mesdames Grinnell, Kaseberg, Meade, Roe and Schlesinger; Messrs. Carriger, Dixon, Grinnell, Heineman, Labarthe, Lastreto, Mailliard, Ray, Strong and Van Denburgh. Mrs. Ray and Mrs. Smith were visitors.

Minutes of the June meeting were read and approved. No minutes were at hand from the Southern Division. The following names were proposed for membership: Miss Rhoda Foster, 721 Peralta Avenue, Berkeley, by J. Grinnell; Judge Thomas C. Denny, Sonoma, by J. Grinnell.

Two communications were read: A letter from the secretary of the A. O. U. acknowledging the invitation of the Cooper Club to the American Ornithologists' Union to hold the latter's annual meeting in Los Angeles in 1925; and a resolution from the American Society of Mammalogists condemning the active propaganda being carried on, largely by those who would be financially benefited, for the destruction of so-called "vermin" and predatory animals.

The attention of the Club was called to the recently issued "Birds of Alabama," both because of its intrinsic interest and because of its value as an example of the beneficial results which may accrue from co-operation between State and National institutions.

Mr. Lastreto, speaking in behalf of the Audubon Association of the Pacific, brought before the Club the fact that in the bulletin soon to be issued by the Park Commission of San Francisco, describing the trees and shrubs of Golden Gate Park, eight pages have been allotted to the Audubon Association for notes on the birds of the Park. Mr. Lastreto requested that those members of the Cooper Club having notes on the birds of Golden Gate Park contribute them to the proposed paper. The suggestion was cordially received.

The talk of the evening was given by Mr. Milton S. Ray who reported upon "Recent Field Work." Mr. Ray's interesting experiences included oological investigations in Arizona from the cottonwoods and mesquites of the San Pedro River across the broad plains to the sycamores of the foothills, then through the oak-wooded hills to the pine-clad summits of the Huachucas. After the conclusion of his work in Arizona, Mr. Ray visited Texas, Kentucky, the District of Columbia, Maryland and New York. The variety of his finds and the extensiveness of the area covered make it necessary for the secretary to leave a more extended account of the field work accomplished to the pen of Mr. Ray himself. Adjourned.—HILDA W. GRINNELL, *Secretary*.

SOUTHERN DIVISION

MAY.—The Cooper Ornithological Club, Southern Division, held its May meeting on Sunday afternoon, May 25, 1924, at Altadena, as guests of Messrs. and Mesdames Law and Chambers. About fifty members and friends were present to enjoy the afternoon. After a pleasant time roaming around the grounds and visiting, the meeting was called to order by the President, Mr. Wyman. Minutes of the April meeting were read and approved. Minutes of the Northern Division were read by title only.

The following names were presented for membership: Dr. Raymond Dobbs, Box 179, Pasadena, by Mary Mann Miller; Mrs. Slavia Leich, care the *Examiner*, Los Angeles, by Mrs. Husher; Mrs. Warren H. Martz, 4601 Welch Place, Los Angeles, by Ella H. Ellis; Mrs. Irving J. Mitchell, 1127 W. 20th St., Los Angeles, by Ella H. Ellis; Dr. Witmer Stone, Academy of Natural Sciences, Philadelphia, Pa., by W. Lee Chambers; Miriam Hall Wegener, 506 N. Third St., Alhambra, by J. Eugene Law.

The Secretary was instructed to include in the notices of the June meeting, to be held at Santa Barbara, a request that members having extra transportation and also those desiring accommodation notify the Secretary to that effect. Mr. Law requested that members present who were keeping accurate records of arrivals and departures of birds under their observation, leave their names with him so that he might get their lists for this year.

Mr. de Laubenfels expressed the appreciation of all present in thanking the hosts and hostesses for their delightful hospitality. The meeting then adjourned and a very pleasant afternoon was brought to a close with the serving of delicious refreshments.—ELLA H. ELLIS, *Secretary*.

JUNE.—At the invitation of Mr. Ralph Hoffmann, the June meeting of the South-

ern Division of the Cooper Ornithological Club was held at the Santa Barbara Museum of Natural History, Saturday evening, June 28, 1924. The following from Santa Barbara were in attendance: Members, Messrs. Hoffmann, Parmenter, Rett, Sheldon and Varick; visitors, Mrs. Parmenter, Misses Banks, Bayles, Burnap, Peckman, Webb and Mr. Rice. Those present from elsewhere were: Members, Misses Potter and Pratt, Mesdames Ellis and Law, Messrs. Appleton, Chambers, Law, Laurence and Sidney Peyton, Rich, Widmann and Wyman; visitors, Miss Marsh, Mesdames Appleton, Hartman and Wyman, and Mr. Beatty.

Previous to the meeting some little time was spent in the Museum examining birdskins, nests, eggs, etc., the habitat groups, in particular, drawing forth expressions of admiration. As the hour was late when Mr. Wyman called the meeting to order, it was voted to waive the reading of the minutes of the previous meeting and to read the May minutes of the Northern Division by title only. A letter from Dr. A. K. Fisher was read, thanking the Club and expressing his appreciation for his election as honorary member. The name of Mrs. W. H. Homer, Jr., 1625 S. 5th East, Salt Lake City, Utah, was proposed by Miss Pratt. Mr. Wyman thanked Mr. Hoffmann and his many helpers for their delightful hospitality and complimented the Museum on the fine collection and the splendid work done in taxidermy. He offered the loan of skins from the Los Angeles Museum for special displays or lectures.

There being no further business, Mr. Hoffmann was called upon to give a short talk on his recent trips. He prefaced his remarks by expressing the hope that the Club would make the meeting at Santa Barbara an annual affair. Mr. Hoffmann's trips began the middle of February and covered about 5000 miles, in which he came across some 300 to 350 species of California birds. He related a number of interesting experiences, such as running into flocks of Cranes at Goose Lake, the Sandhills getting ready for the northward migration, making evolutions in the air above an alfalfa field like the Pelicans. He described the cry of the Elf Owl, heard on several evenings in the giant cactus near Tucson. His explanation of the sound made by the Wilson Snipe during the breeding season was especially interesting.

The meeting then adjourned, after which everyone enjoyed the refreshments served. —ELLA H. ELLIS, *Secretary*.

JULY.—The Southern Division of the Cooper Ornithological Club held its regular monthly meeting at the Los Angeles Museum, Exposition Park, on Thursday, July 31, 1924, at 8 P. M., with the president, Mr. Wyman, in the chair and the following members present: Misses Burnell and Potter; Mesdames Anthony, Barnes, Ellis, Hall, Law, Robertson and Schneider; Messrs. Barnes, Calder, Chambers, Hanaford, Law, Robertson, Ross and Wyman. Visitors were Misses Marsh and Sykes, Mesdames Chambers, Edwards, Reis and Wyman, and Mr. Van Tyne.

Minutes of the May and June meetings were read and approved. The following names were proposed for membership: Myrtle S. Edwards, 2121 North Allen Street, Altadena, by J. Eugene Law; Mildred E. Sykes, 3915 South Vermont Avenue, Los Angeles, by L. E. Wyman. A letter from the A. O. U. was read, acknowledging receipt of the Club's invitation to the Union to hold its 1925 meeting in Los Angeles.

Mr. Law announced that he is now able to supply traps to banders who desire them, as he has made arrangements for the manufacture of both the collapsible and the six compartment trap, at moderate cost. The meeting was then declared open for general discussion and reports. Mr. Wyman passed around a tray of Cowbird skins, including the Eastern, the Nevada, and our own form. Different birds mentioned as having been seen with young Cowbirds in tow were: first-year male Arizona Hooded Oriole, male Willow Goldfinch, Song Sparrow, and English Sparrow.

Mrs. Schneider and Mrs. Hall reported on shore and water birds seen during the past few days at Playa del Rey. Mrs. Schneider brought up the question as to whether or not birds were more concentrated this year in places where there is considerable moisture. The general opinion was that this is true. It was reported that birds in the vicinity of the Los Angeles Playground Camp in the High Sierras were not laying full sets of eggs this year, and Mr. Wyman stated that a falling off in reproduction of species is one of the first evidences of shortage of food. Various members added other observations of interest.

Adjourned.—ELLA H. ELLIS, *Secretary*.

For Sale, Exchange and Want Column.—Any Cooper Club member is entitled to one advertising notice in each issue free. Notices of over ten lines will be charged for at the rate of 15 cents per line. For this department, address W. LEE CHAMBERS, *Drawer 123, Eagle Rock, California.*

WANTED—N. A. Fauna Nos. 19, 25, 27, 28; Oologist 3/4, 4/1, 3, 4, 14/1, 5, 15/7, 16/4, 9; Osprey 1/2, 4, 3/8, 10, 4 and 6 nearly all; O. & O. 8/3, 4, 9, 10, 11, 12, 10/8, 9, 11/10; Nidiologist 1/2, 4, 5, 6; Taxidermist, of Medina, O., 1/1; Naturalist, of Austin, Tex., 1/5; Museum, of Albion, N. Y., for Nov., 1899; First Annual Report of the State Ornithologist of Mass. —CHAS. W. TINDALL, *Independence, Mo.*

FOR SALE—Collection of five hundred beautifully mounted birds of one hundred and fifty species taken in southwest Missouri; also some mounted mammals.—AUGUSTA KASTENDIECK, *Billings, Mo.*

BIRD SKINS—Those wishing to supplement their collections by the addition of tropical species can find a great number available from Costa Rica, collectable on order.—AUSTIN SMITH, *Apartado 412, San Jose, Costa Rica.*

WANTED—A pair or two of skins or mounted birds, with data, of the Passenger Pigeon; cash or exchange.—H. H. BAILEY, *Box 5, Miami Beach, Fla.*

DUPLICATE BIRD BOOKS FOR SALE—I have recently moved, and in doing so I discovered I had a great many duplicates, which I wish to dispose of.—W. LEE CHAMBERS, *Drawer 123, Eagle Rock, Calif.*

WANTED—Exchange or cash: The Auk, volumes or single numbers from 1884 to 1900 inclusive. Also odd numbers for 1902-1903 and 1907.—STANLEY G. JEWETT, *515 Post Office Bldg., Portland, Oregon.*

FOR SALE—THE CONDOR, complete to date; Nidiologist, a complete file except vol. 1, no. 6; Osprey, complete except (New Series) vol. 1, no. 7.—OWEN DURFEE, *727 Madison St., Fall River, Mass.*

FOR EXCHANGE—Boucard's Travels of a Naturalist, 1894. Send offers in natural history and scientific travel. Wanted: vols. 5-7, 10, 11, Proc. U. S. National Museum, and odd nos. and vols. of American Naturalist.—CHARLES A. KOFOID, *University of California, Berkeley, Calif.*

WANTED—A. O. U. Check-list of N. A. Birds, 1910 edition.—E. ARNOLD, *Freight Claim Agent, Grand Trunk R. R., Montreal, Quebec.*

JUST OFF THE PRESS

PACIFIC COAST AVIFAUNA No. 16

BIBLIOGRAPHY OF CALIFORNIA ORNITHOLOGY

Second Installment, to the end of 1923, by JOSEPH GRINNELL; 192 pp.

Supplementary to Grinnell's "Bibliography of California Ornithology" (Pacific Coast Avifauna no. 5, 1909). It continues the work from the date upon which the first installment ends and includes many titles that were omitted from the earlier publication. Details of style conform closely with the first installment, so that the two Avifaunas, numbers 5 and 16, make a uniform whole. There is no duplication of entries. There were 1,785 titles listed in the first installment; there are 2,286 in the second, a total of 4,071 in the two parts. The two, together, are indispensable to any student of North American birds, and should be in every ornithological library in America.

Of the first installment, Dr. J. A. Allen, in review, remarked: "It is safe to say that this is the most important contribution to the bibliography of North American ornithology since the Couesian contributions of 1878-1880 set the high standard here closely followed."

Sold only by the Club; price $6.00. Cooper Club members may take their usual discount.

For sale by W. LEE CHAMBERS, Business Manager,
Drawer 123, Eagle Rock, Los Angeles Co., Calif.